SINGHALESE TYPES AND COSTUMES—BUDDHIST PRIESTS.

THE

EARTH AND ITS INHABITANTS.

ASIA.

BY

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THE EARTH AND ITS INHABITANTS.

INDIA AND INDO-CHINA.

CHAPTER I.

GENERAL SURVEY.

INDIA is one of those names to which during the course of ages the greatest variety of meanings has been attributed. Applied originally to the region watered by the lower course of the Sindhu, that is, the Indus of Western writers, it was successively extended to all the Eastern lands either visited by the ancients or known to them by report. In this way it was thus gradually spread to the Ganges basin, to the Dekkan peninsula, and even to the regions lying east of the Ganges. The islands scattered along the south-eastern seaboard of the continent came also to be regarded as belonging to the Indian domain, in which were likewise included the remote archipelagoes of Malaysia, where the Europeans were preceded by the Arabs in their commercial expeditions. In the language of mediæval writers, India comprised Arabia itself, and Ethiopia, that is to say, all the tropical lands of the south and east which in their climate and products presented the greatest contrast to the regions of the temperate zone. Lastly, when Christopher Columbus sailed westwards in search of the eastern confines of Asia, the islands and shores of the New World lying across his path were naturally designated by him under the name of the land which he supposed he had reached. The new "India," that is, the Antilles and mainland, has retained the name thus conferred on it by the Genoese navigator. It is, however, now at least distinguished by the epithet of "West" from the India of the eastern hemisphere, whereas, through a deplorable ethnological

confusion, the American aborigines are still always spoken of simply as "Indians," a term properly applicable to the inhabitants of the Cisgangetic peninsula alone. The geographical expression "India" has at least acquired a certain precision. But while applied in a narrow sense and in the singular number to the two eastern peninsulas of Southern Asia, it also comprises in a more general way all the archipelagoes stretching thence between the Sea of Japan and the Indian Ocean south-eastwards in the direction of Australia. This volume, however, will be confined exclusively to the India of the mainland and the islands directly dependent on it.

Physical Features.

In East India the physical features of nature are in many respects presented in their grandest aspect. The plains watered by the Indus and Ganges are encircled northwards by the loftiest mountains on the globe, nor is the contrast between their glittering snowy peaks and the unbroken sea of verdure clothing their lower slopes elsewhere developed on such a vast scale. North of the main range the Tibetan plateaux present interminable solitudes, destitute of water and vegetation except in the deeper depressions, in which are gathered the mountain torrents, and where shelter is afforded to men and plants. But towards the south the land falls in successive terraces down to rich and well-watered plains abounding in animal and vegetable life. Within the highlands themselves extensive valleys are developed, like that of Kashmir, which in the popular fancy have been converted into earthly paradises inhabited by mankind during the golden age. These delightful uplands are in truth almost unrivalled for their healthy climate and fertile soil, their lovely landscapes reflected in limpid lakes and running waters, their amphitheatres of snowy ranges, and canopy of bright azure skies.

In the archipelagoes attached to the mainland at the other extremity of India, the energy of the vital forces is displayed by phenomena of a different order. Here the dazzling snow-clad ranges are replaced by lofty cones towering above pent-up liquid igneous masses stretching from island to island for hundreds of miles. Nowhere else are the fissures in the crust of the earth covered by such a regular series of still active volcanic crests, everywhere clothed with a zone of the richest tropical vegetation. Elsewhere hard lava streams, producing not a green leaf, pools of boiling mud, bottomless pits emitting dense vapours accompanied by underground thunders, silent vales filled with deadly exhalations, contrast vividly with forests of stupendous growth, where the overflowing sap transformed to gums, frankincense, or poisonous exudations, oozes from the interlaced stems and branches of a rank vegetation. There was a time when volcanic phenomena analogous to or even more violent than those of the Sunda Islands might still be witnessed on the Indian mainland itself. The lava fields strewn over the Dekkan tableland bear eloquent witness to the prodigious energy formerly displayed by the plutonic forces of the peninsula. But at present the region of continental India has entered on a period of repose, disturbed only by vibrations occurring at long intervals, such as all the seaboards of the great continents are exposed to. A few extinct craters are said to

be still visible on the plains of Konkan, east of Bombay. But on the Dekkan proper the only true volcanic cone is that which half fills the lake of Lunar, although even here no trace can be detected of recent eruptions. An igneous explosion, however, is said to have occurred in modern times some ten miles off the Coromandel coast, near Pondicherry.

In the Transgangetic peninsula a few true craters have been discovered, of which the most conspicuous seems to be the Pappa-lung on the Irrawaddi, between Arrakan and Pagan. But even these have all been extinct since the miocene period. The only eruptions recorded by history in this region are those of the numerous mud volcanoes in the islands of Ramri and Cheduba, and on the neighbouring mainland between Chittagong and the Irrawaddi delta. Ashes and lavas are also occasionally discharged by Narcadam and Barren Island, two islets lying east of the Andamans, which may be regarded as the crests of a submarine chain running parallel with that group.

Under the Indian climate atmospheric disturbances are more violent than elsewhere. Within the area stretching from the bleak Tibetan plateaux to the sultry coastlands of both peninsulas, and from the shores of the Indian Ocean to those of the China Sea, the variations of temperature, humidity, atmospheric pressure, and electric tension are occasionally so great that the regular change of the winds is insufficient to restore the equilibrium. Hurricanes spring up no less formidable than those of West India and the Mascarenhas, but still more terrible in their results, inasmuch as they sweep over regions far richer and more densely peopled. The track of an Indian cyclone has often been traced by ruined cities and whole communities buried under the débris. Although washed by the ocean, the western peninsula has none the less more than one true desert, and the heaviest downpours hitherto recorded fall, not on the plains, but on the slopes of the mountains. In some districts the rains are on an average twenty times more abundant than in the wettest parts of France. Hence the rivers, such as the Brahmaputra and Ganges, have a volume often out of all proportion with their length and the area of their drainage, and send down vast quantities of alluvial matter, which tends rapidly to change the form of their estuaries. Although discharging into marine basins subject to heavy tides, most of the streams in India and Further India have consequently advanced their deltas far seawards. Even in the relief of these basins and the phenomena of which they are the scene, the Indian peninsulas differ from the other regions of the globe. The Pacific Ocean, the waters of the Antilles and Bahamas, have their atols, or circular coral formations. But none of these coralline groups can be compared with the Maldives, or "ten thousand isles," for the astonishing regularity of their annular reefs, themselves composed of other atols, which are again divided into rocks of similar form, scarcely rising above the surface of the surrounding waters.

Inhabitants.

The section of the human family dwelling in the East Indies, and especially in Hindustan properly so called, may claim to rank on a footing of equality with the

Western peoples themselves for the importance of the part played by it in the history of the world since the dawn of civilisation. Its very numbers ensure for it a foremost position amongst the nations of the globe, since fully 300 millions of souls, or more than one-fifth of mankind, are concentrated in the two peninsulas between the Indus delta and the Strait of Malacca. Hence these regions are relatively four or five times more densely peopled than other lands, and in some favoured tracts, such as the plains of Oudh and Bengal, more people are massed together than in any other region of like extent outside the large cities. Doubtless the work of nations is not to be measured by the density of their communities. But it was amongst the common ancestors of the present Hindus and their neighbours on the northern slope of the Hindu-Kush that historians have discovered, amongst the first teachers of cultured humanity, those who most resemble the Western peoples in speech and mental qualities, and who have left us, in the purest state, the rudiments of our primitive civilisation.

So late as the last century, writers seeking for the first germs of European culture still looked towards Greece and Asia Minor, while also probing the mysteries of ancient Egypt and Babylonia. But the discovery of the treasures for which the modern world is indebted to the prehistoric communities of the upper Panjab was reserved for the inquirers of recent and contemporary times. After an interval of over 3,000 years the venerable words of the Vedas uttered by the Rishis or "Sages" seem to the living generations like the echoes of their childhood's song. These utterances they fancy they have heard in the cradle, or repeated in a dream, so forcibly do the long-forgotten accents awaken earlier impressions in their soul. In the history of these vanished societies they still recognise a vivid reminiscence of their own past. The cult of the Vedic tribes settled on the banks of the "Seven Streams" is the same that the child instinctively adopts as he trembles before the storm, appeals to sun and rain, personifies trees, springs, clouds, and all natural objects. The simple myths associated with this religion of the primitive Aryan peasant have been handed down from age to age, from one form of worship to another. Yet amid the thousand changes caused by the intermingling of so many diverse elements, they may still be clearly recognised. The very names of the ancient gods still survive, and the legends related during the long winter nights by the old peasant women of Thuringia, the Abruzzi, or Limousin, resemble even in their details the stories told of an evening in the rural villages of the Dekkan or Rajputana. From the Mekong delta to the western extremity of Europe the same superstitious practices are observed on all important occasions by the husbandman, who has long forgotten the primitive meaning of these simple rites.

And while this common inheritance was maintained in the mind of the peoples from one end of the Old World to the other, the progress made in the higher spheres of thought amongst the kindred nations on either side of the "Indian Caucasus" was effected in accordance with a corresponding evolution. The Hindu thinkers approached the great problems of life with the same daring and in the same broad spirit as did later on the philosophers of Greece and the West. At the same time the minstrels sang the deeds of the national heroes, and thus were

gradually composed marvellous epics, the distant echo of which is still found in the Iliad. In fable and story the "wisdom of India" became proverbial. The drama arose, mingled at first with sacrificial hymns, but destined soon freely to soar into lofty regions of thought and expression, which for beauty of language and sentiment have never been excelled. And the very language itself, in which these admirable works were written, is closely akin to the "Aryan" tongues, which have gradually prevailed in Europe, and which are now spoken by over 100 millions of human beings in the New World and Australasia. Amongst the inflecting forms of speech the beautiful Sanskrit idiom, in which philologists have discovered so many roots and primitive elements common to the European branches, is surpassed by none in wealth, pliability, and euphony. Through language, that is, through living thought, the Western and Eastern peoples have at last recognised their mutual affinities. India is the sister of Europe, and since the rediscovery of this forgotten truth she has more than any other land supplied to Western students the materials with which they have been enabled to create and classify the three modern sciences of comparative philology, mythology, and jurisprudence. To the Hindus we are indebted for the decimal system and the use of the zero. Except the Phœnician alphabet, the supposed common origin of all the Indian as it certainly is of the Greek and Roman characters, no other invention has contributed more than this method of calculation to the progress of the exact and physical sciences.

Nevertheless the Aryan world confined to the Indus and Ganges basins had always remained perfectly distinct from the kindred Western branches of the family. The Hindu branch is completely limited, if not north-eastwards in the direction of China, at least westwards and north-westwards in the direction of Irania, by waterless regions, rugged plateaux, and lofty snow-clad ranges. These natural frontiers are so clearly drawn that they have necessarily also become ethnical parting lines, in spite of numerous military expeditions and temporary annexations. On either side of this line the various peoples of kindred speech have followed a different and independent development. Nevertheless the mountain passes, through which the primitive Aryans of both slopes had maintained certain mutual relations, are not sufficiently elevated or obstructed by snows to have ever completely interrupted the communications between the Indian peninsula and Western Asia. Armies and caravans were acquainted with the routes by the Bamian and other passes over the Hindu-Kush, and were able to descend towards the plains of India by the historic highway following the course of the Kabul River. And if the European nations ceased from time to time to have any direct or indirect relations with Hindustan, the cause was due to the wars of invasion intervening between the two extremities of the Aryan world.

Taken collectively, the lands known as the East Indies present a less clearly defined geographical whole than does the European continent, and their history consequently lacks the same character of unity. Doubtless Cisgangetic India, considered separately, is one of those regions which present the greatest geometrical precision in their contour. For it is disposed in an almost regular polygonal surface by the surrounding seas and mountains. But Transgangetic India is far

from enjoying equally precise outlines towards the continent. Here the mountain ranges and river valleys are so disposed that a zone of gradual transition occurs everywhere from Burma, Siam, and Annam to the south-western provinces of China. As indicated by the very name of Indo-China, first proposed by Malte-Brun and since his time commonly applied to the south-eastern peninsula of Asia, this land

Fig. 1.—Linguistic Families of India.
Scale 1 : 28,000,000.

belongs both geographically and historically to both of the adjacent regions. The neighbouring islands and archipelagoes also naturally form so many independent domains, some of which are rarely visited, in consequence either of the dangerous reefs surrounding them or of the impenetrable forests by which they are still mainly covered. Even on the mainland many tracts are strewn with stagnant waters or clothed with dense jungle impassable to the traveller or explorer.

Thus divided into a number of distinct sections, the East Indies cannot be compared with Europe in the fulness of their historic life. No empire was ever here developed rivalling the Roman world, which embraced the whole of the Mediterranean basin, and which was limited southwards only by the African deserts, northwards by the surf-beaten shores of the Atlantic and the vast forests of Germania. Although the *pax Romana* has been disturbed, and although Europe is now divided into several independent and at times hostile states, nevertheless most of the continental nations are sufficiently allied, morally and intellectually, to regard themselves as sprung of a common stock, speaking kindred languages, drawing their myths and ideas from the same source, sharing in a common civilisation, whose local disagreements are daily diminishing.

In India, on the contrary, racial distinctions have remained comparatively far more marked, and even in Hindustan proper there are no less than five ethnical groups, differing in physique, speech, and usages. The preponderating "Aryan" element, the pure representatives of which dwell in the upper Ganges basin within sight of the sacred Jamnotri and Gangotri Mountains, would comprise no more than 10,000,000 souls, were it limited to those only who bear the name of Brahman. But in spite of the institution of caste, which is in any case subsequent to the Aryan invasion, and which was suspended by Buddhism for centuries, the victorious intruders became diversely intermingled with the aborigines. While they were themselves being Indianized, they were gradually assimilating the natives to the Aryan speech, and in the northern and central regions as well as in Ceylon there are no less than 170,000,000 who speak Aryan languages. Southern India, however, still constitutes a distinct linguistic domain, where the Dravidian tongues are universally current. In the central provinces, also, the Kols, Mundahs, Santhals, and other half-savage tribes, probably the descendants of the old masters of the land, who had been gradually driven to the hills and wooded districts of the interior, speak languages belonging to a third stock, commonly known as the Kolarian, from one of the chief members of the autochthonous group. The Khasi, or Kahsia, occupying an upland tract between the Brahmaputra and Irrawaddi basins, forms a fourth family, differing altogether from its neighbours in speech. Lastly, the Bod, or Tibeto-Burman of the Himalayas and Western Indo-China, the Tai, or Siamese, the Annamese, and the numerous dialects comprised under the name of Malay, form so many sharply defined divisions, all attesting an extreme diversity of origin. Probably as many as two hundred and fifty distinct languages are current in the East Indies, offering every imaginable transition from the isolating idioms of Indo-China to the highly inflected neo-Sanskritic group of Hindustan.

Religions.

Thanks to proselytising zeal, the domain of the religions which arose on the northern plains of India, had a far wider expansion than that of the Aryan tongues, and their diffusion was accompanied by the corresponding civilisation. The Brahmanism, which succeeded to the older Vedic rites, undoubtedly sought, like all

other religions, to conquer the world. It reached even to the island of Java and the neighbouring Bali and Lombok, where its influence still survives in the dialects, traditions, manners, arts, and political institutions of the people. All the languages of the East Indies preserve at least the traces of the myths and heroic legends disseminated by the Hindu missionaries. Even amongst the pagan communities of the Malay Islands and of the Indo-Chinese forests ceremonies are still observed which here and there recall the rites formerly practised in the Panjab.

But still more active was the propaganda organized by the disciples of Buddha. With a zeal that has never been surpassed, the heralds of the "Great Doctrine" went in search of the remotest barbarous or civilised peoples, everywhere proclaiming the good tidings of equality, self-abnegation, justice, and brotherly love. Crossing the Hindu-Kush, the Pamir, and Himalayas, they undertook the moral conquest of the vast regions stretching from these lofty ranges away to the Pacific seaboard. Their faith subdued the peoples of Tibet, Mongolia, China, Japan, while their influence was felt, under the form of Shamanism, amongst the Chukchis, Tunguses, Samoyedes, and other tribes dwelling along the shores of the Frozen Ocean. Till the middle of the present century, before the great convulsions in China and the enormous increase of the white race in Europe and the New World, the followers of Buddha were still far more numerous than those of all the Christian sects combined.

But while it was thus overflowing beyond the land of its birth, and disseminating in many places Hindu ideas together with a knowledge of the sacred Pali language, and of the "divine" Nagari writing, Buddhism was gradually losing its empire in India itself, and had already been here and there driven by persecution to the upland valleys of the surrounding highlands. The spirit of caste, represented by the various cults of Brahmanic origin, had once more acquired the ascendency.

Later on a third religion, Islam, was introduced by arms and proselytism from Western Asia, and acquired its greatest development in the sacred land of the "Seven Rivers," now known as the Panjab, or "Land of Five Waters." Thus it is that religions succeed each other on the same soil, just as in the woodlands the various species of plants change from epoch to epoch by a natural law of rotation. Following the great trade routes in the wake of the Arab vessels, Mohammedanism became also diffused throughout the south-eastern archipelago, where it was superimposed upon the various local religions. On the other hand, Christianity became the prevailing form of belief only where it was imposed by force of arms, as took place in comparatively recent times in Ceylon and Calicut. But in all these districts Catholicism lost its apparent supremacy over the national cults as soon as it ceased to be the state religion.

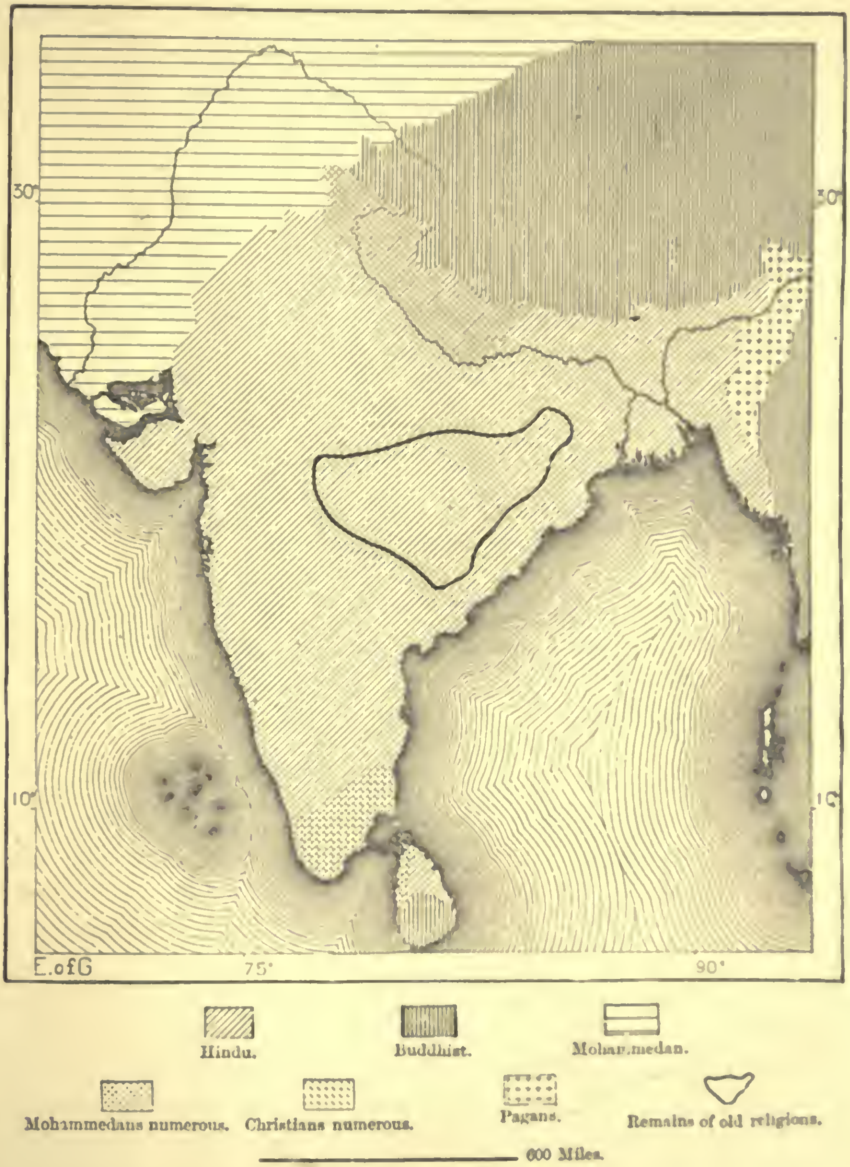
Historic Retrospect.

Since the remote epochs of the first Aryan migrations, the Indian populations have always played a passive part in the successive wars and invasions of the land. From the moral point of view the expansive force of Hindu genius was no doubt

BANDERPUNCH, OR JAMNOTRI—VIEW TAKEN FROM THE HEIGHTS OF BARSU, ON THE SOUTH-EAST.

very considerable, as shown by the triumphs of Buddhism throughout Eastern Asia, and by the deep influence exercised by the Indian myths and traditions on the philosophy and theologies of Western Asia, Egypt, and Greece during the period which prepared the advent of Christianity. But from the material standpoint the

Fig. 2.—The Religions of India.
Scale 1 : 28,000,000.



Hindu populations, never having realised their own political unity, were unable to attempt the political conquest of the surrounding lands. And in any case with other region could have appeared more attractive in their eyes than their own beautiful country, with its magnificent forests, highlands, running waters, and

abundant resources of all kinds? The hills to the north-east held by marauding tribes, the malarious forests and snowy ranges of the north, the rugged gorges and dismal wastes to the west, everywhere presented formidable obstacles, which were surmounted only by their zealous missionaries and enterprising traders. No emigration in mass of the Hindu populations has taken place during historic times with the single exception of the mysterious gipsies, who are supposed to be descended from the Jats, or Banjari, driven from the banks of the Indus by the Mohammedans in the eighth or ninth century. Although possessing a coast line some 3,500 miles in extent, the Hindus never distinguished themselves as navigators, and the two higher castes were even forbidden to leave the country. Some Banig-yana or Hindu Banians, mostly from Gujarat and the neighbouring coast, are no doubt met in all the ports along the Arabian Sea, while several settlements of Klings, or Southern Indians, are found in Malacca and other parts of Malaysia. Nevertheless most of the foreign trade of the peninsula remained in the hands of the Arabs from the days of Hiram and Solomon down to the arrival of Vasco de Gama.

On the other hand, how many ambitious rulers, how many captains eager for fame or fortune, have attempted the conquest of a land whose very name had become synonymous with boundless wealth! For thence came the costly fabrics, the jewelled arms, the carved ivories, the pearls, diamonds, and gold which caused the Western nations to credit this region with all the treasures of fabulous lands. Both Semiramis and Cyrus are said to have sent their hosts to the confines of India, and, according to the legend, all who accompanied the expedition of Cyrus perished in the deserts of Gedrosia, that is, of Makran or Southern Baluchistan. The projects of Cyrus were renewed by Darius, son of Hystaspes, and the first really historical invasion, which Herodotus tells us had been prepared a few years previously by the explorations of Scylax of Caryanda, was undertaken towards the beginning of the fifth century before Christ, as appears from various Persian rock inscriptions.

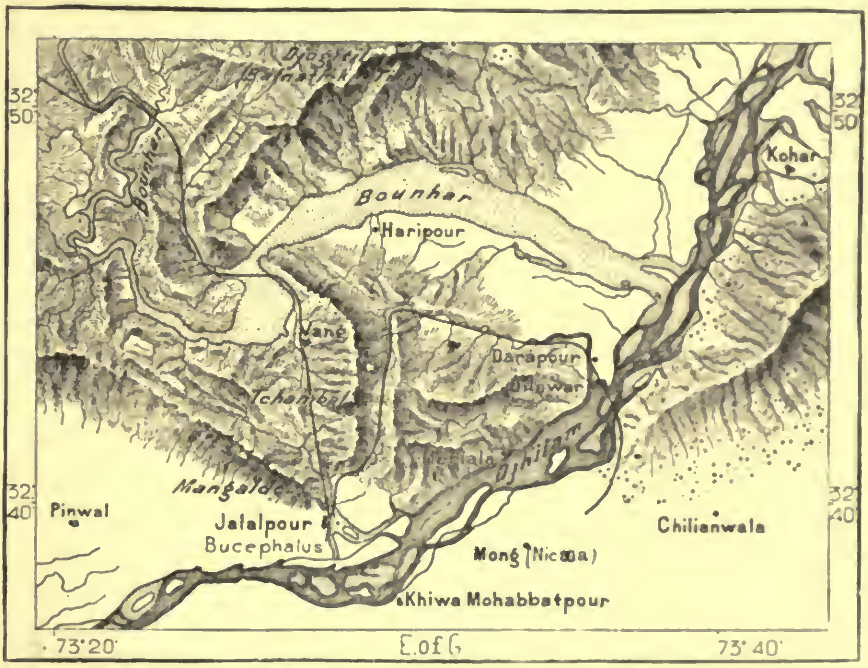
Alexander of Macedon, conqueror of the Persians, sought to eclipse their exploits "by opening to the peoples of the known world regions which nature had long kept concealed."* Marching in a south-easterly direction parallel with the advanced spurs of the Himalayas, and no doubt deviating little from that "royal route" now traversed by the railway, which was at all times the great highway leading from the passes of the Hindu-Kush towards the Ganges valley, he forced the passage of the Hydaspes (Jhilam) probably some 20 miles below the spot where now stands the city of like name. The aspect of the country fully confirms the descriptions of the ancient writers, and the side valley especially can be identified, through which Alexander marched by night in order to take the army of Porus by surprise. The mountain also, which overlooks the whole region from the north, still bears the name of Balnath-ka-tila, or "Mountain of the Sun," as at the time when Porus here consulted the oracle.

Beyond the Jhilam, Alexander successively crossed two other rivers, the Acesines (Chinab) and the Hydraotes (Ravi), and some heights in the Mandi dis-

* Quintus Curtius.

trict to the north are still known as the Sikandar-ka-dhar, or "Mountains of Alexander." Retracing his steps to the scene of his victory on the Jhilam, where he had founded the city of Nicæa on the left and Bucephalus on the right bank, he descended the river to the Indus, and so on to the sea, exploring the branches, mouths, and ports of the main stream, and founding cities in suitable positions for establishing permanent intercourse between the East and the West. Thus began the scientific exploration of India. From that epoch the routes to the peninsula were never forgotten by the Western peoples, and down to the time of Justinian traders from Rome, Byzantium, or Alexandria continued to follow the direct route to the Indus opened up by the Macedonian conqueror. Megasthenes, envoy of Seleucus

Fig. 3.—Supposed Spot where Alexander crossed the Jhilam.
Scale 1 : 375,000,000.



Alexander's probable line of march.

6 Miles.

Nicator, penetrated much farther into the interior, where he visited the city of Palibothra on the lower plains of the Ganges. King Sandrocottus, by whom he was entertained, was doubtless the famous Shandragupta of the Hindu annals. His is the first name which agrees at once with the accounts of the Greek and native historians.

After Alexander's expedition the first great invasion was that of the Mohammedans. From the beginning of the eighth century the Arabs began to make their appearance in the Indus valley, and during the eight following centuries, down to the foundation of the so-called "Moghul Empire," the north-west frontier of Hindustan remained nearly always open to the invader. But Sultan Baber, founder of

that empire, had scarcely crossed the passes leading from Turkestan to the Indus basin, when the European navigators by doubling the Cape deprived the routes of the Hindu-Kush of much of their commercial and military importance. By his naval expedition Vasco de Gama had, so to say, obliged Europe to face about, turning from the direction of Egypt and Persia southwards in order to establish its communications with India. Thus Lisbon succeeded to Venice as the emporium of the treasures imported from the Gangetic peninsula, and the equilibrium of the whole world became shifted farther west. Henceforth the maritime states of Europe found themselves virtually nearer to India than those of Central Asia itself. Nor did the Portuguese remain satisfied with trading along the Malabar coast. But they had scarcely gained a footing on the mainland, when formidable rivals presented themselves on the scene. The Dutch, English, Danes, and French successively established their trading factories in the country, and for a moment it seemed as if Dupleix was about to transfer the empire of the Dekkan to France. But abandoned by the mother country, the small and scattered forces of the French were annihilated by those of the English East India Company, which gradually seized all the chief commercial marts and strategic points, and thus became the paramount power in the East.

In the year 1803 the English occupied the capital itself of the great Moghul, and the successor of Baber and Akbar became a simple pensioner of the "Company." Then followed the rapid submission or annexation of all the lesser states to the Anglo-Indian empire, and at present the Empress of India holds direct or indirect sway over upwards of two hundred and sixty millions of people in Hindustan. She is also mistress of the more productive parts of Burmah, and controls most of the kinglets in the Malay peninsula. At the very extremity of this peninsula, and on the direct water highway to the China seas, the British emporium of Singapore has been thrown open to the trade of the world.

France on her part has occupied in Cochin China and Camboja a more extensive territory than the whole of her Indian possessions in the last century. Lastly the Chinese, without having politically annexed a single islet or headland in the Indian waters, derive more benefit from this region than many European nations. Through their trade, industry, and colonisation they must, in fact, be regarded as true conquerors, and Siam may already be said to belong economically more to the Chinese than to the Siamese themselves. Throughout the East Indies the only really independent peoples are those of Nepal and Bhutan, and some wild or half-civilised tribes of the Himalayan valleys, the Indo-Chinese forests, and a few islands of Malaysia.

With the exception of some tracts on the Tibetan frontier, such as Bhutan and Upper Assam, the Indian peninsula has already been everywhere thoroughly surveyed, and the maps of some of its provinces rival in accuracy those of Western Europe. But Indo-China has been regularly explored only in the British and French possessions and along the seaboard. Here a striking contrast is presented in this respect between the coast lands and the regions farther inland. While the Strait of Malacca is yearly traversed by thousands of vessels, most of the Laos

country and of North Burma has hitherto remained unvisited by European explorers, and even the very course of the great rivers has not yet been fully traced. But we can scarcely remain much longer in such a state of ignorance regarding the interesting tracts separating the Bay of Bengal from the upper Yangtze-kiang valley. Impelled by their mutual commercial interests, the peoples are everywhere seeking to approach each other by the most direct routes. Travellers, who now prefer the overland route through the Suez Canal to the roundabout way of the Cape, will one day follow one or other of the lines of railway destined to connect Europe and Asia through Constantinople and the Euphrates valley, or through Caucasia and Afghanistan. In the same way Calcutta will sooner or later be connected by more than one overland route with the cities of East China, and then the intervening regions, now almost unknown, will be traversed by some of the most frequented highways on the globe. Meantime the fact that India and China, the two most densely-peopled regions in the world, in which are concentrated one half of the human race, still remain unconnected by a single highway, shows how far mankind still is from having subdued the planet of which he calls himself master.

CHAPTER II.

GENERAL SURVEY OF HINDUSTAN.

THE Persian term Hindustan, that is, "Land of the Hindus," is merely another form of the old name of India, which has been applied to the peninsula from prehistoric times. According to most commentators this name is simply that of the river Sindhu changed by the Western peoples to Hindhu, Indos, Indus, the whole peninsula having been named from the stream which watered the plains of the first Aryan settlers. But this etymology has seemed too simple to be universally accepted. The Chinese pilgrim Hwen-tsang derived the word from *in-tu*, in the sense of "moon," because the priests lit up the land by reflecting the light of the sun, as does the moon! Others have identified *India* with the god *Indra*, whose arm directs the course of the moon in the heavens, implying that Hindustan is pre-eminently the "Sublunar World." It also bears many poetic names, such as Sudarçana, or "Fair to look upon;" Bharata varcha, or "The Fertile Land;" the "Lotus Flower;" Jambu dvipa, from the *Eugenia Jambolana*, a beautiful species of myrtle, one of which plants is described in the Mahabharata as growing on a summit of the Himalayas, "holy, everlasting, heaven-kissing, laden with fruits which fall crashing to the earth, where their juice flows in a broad stream."

The expressions Arya varta, Arya bhumi, Arya deça, that is, "land, region, or domain of the Aryas," given to the country by the conquering race, are properly applicable only to the parts occupied by the Aryas, that is to say, the basin of the "Seven Rivers" and the plains stretching thence eastwards to the Jamna. For the history of the Vedic Aryas closes with the epoch when these immigrants reach the banks of the Ganges. But their successors, the privileged high-caste Brahmans, could also claim as their special domain all the land occupied by them. Hence amongst other names of the present India, Hwen-tsang mentions that of "Kingdom of the Polomen," that is, of the "Brahmans."

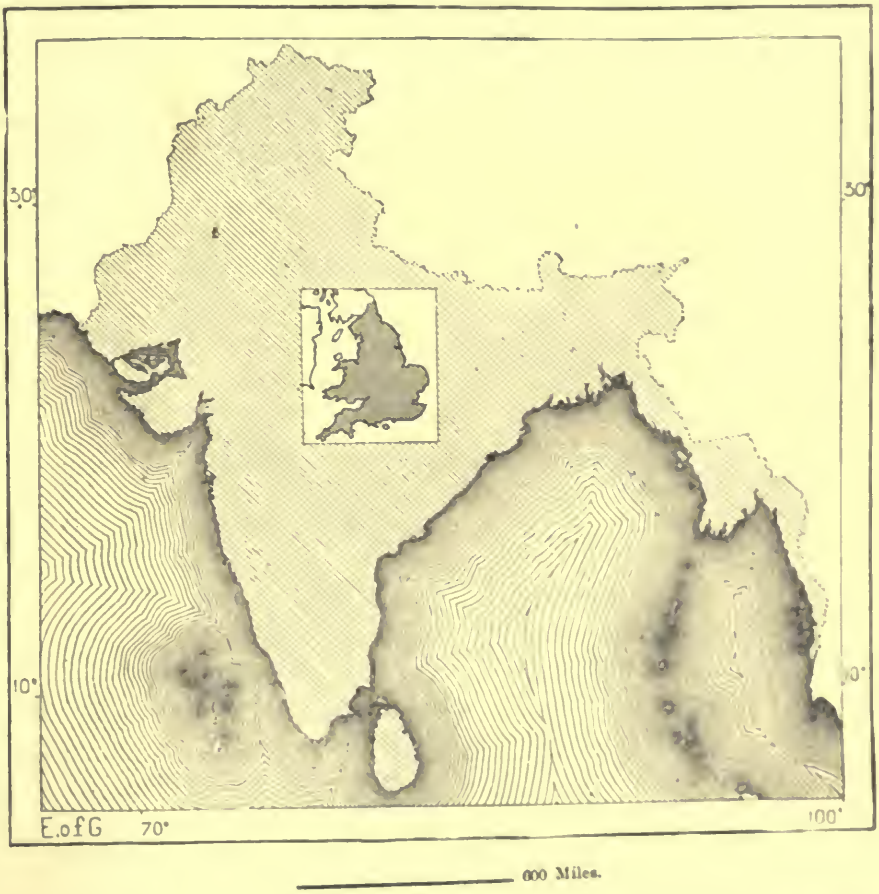
PROGRESS OF GEOGRAPHICAL RESEARCH.

So clearly defined are the natural limits of Hindustan, that although occupied by different races and divided politically into hostile states, the physical unity of

the peninsula has never been questioned. Like the Italy of past time, India had always the value of a "geographical expression." Along a frontier and seaboard with a total length of over 14,000 miles, it is everywhere enclosed by the sea and lofty ranges, which thus comprise a vast region no less than 1,500,000 square miles in extent, or twelve times the size of the British Isles and over one-third of all Europe, and stretching from the equatorial lands for over twelve degrees of latitude into the temperate zone. With their mania for conventional divisions, some learned pandits and European geographers have doubtless taken the course of the Indus as

Fig. 4.—Comparative Area of India and England.

Scale 1 : 35,000,000.

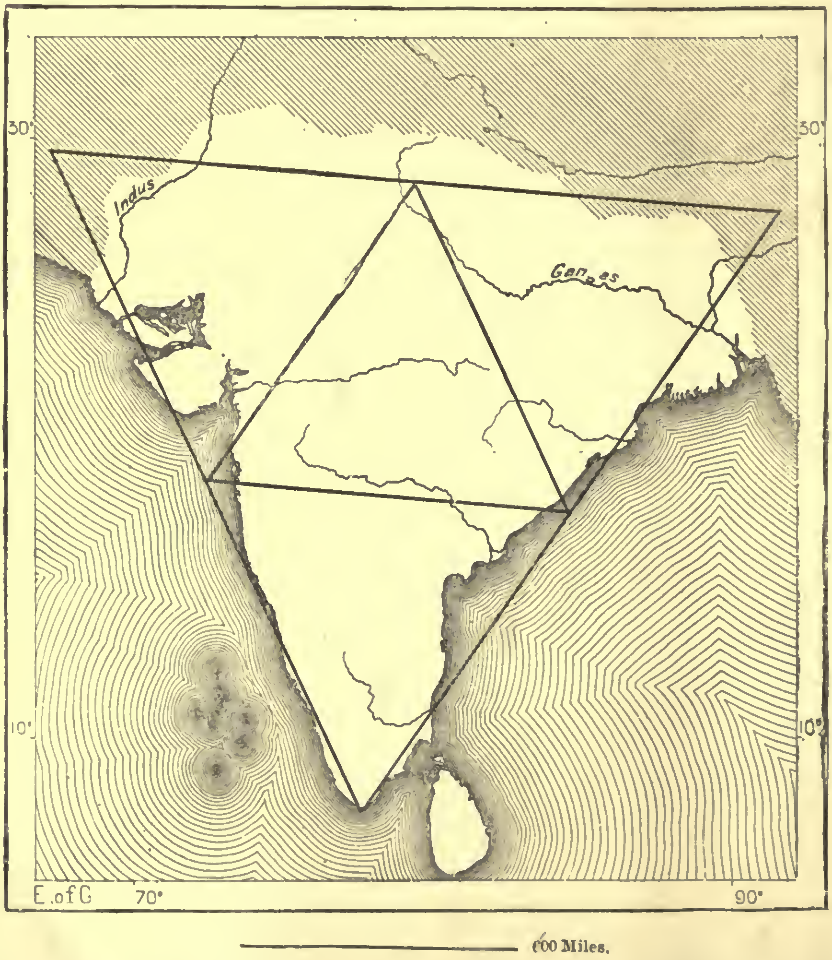


the north-west frontier of Hindustan. But real geographical limits are formed not by the shifting beds of rivers, but by mountain ranges, with their climatic zones and inhabitants differing in their habits from those of the plains. On this point the natives of the Indus basin have never been at fault. They have at all times understood the contrast presented by the "hot region" occupied by their cities, and the "cold region" of the plateaux and upland valleys peopled by the Afghan tribes. These are the highlands now known by the names of Sefid-koh, Suleiman-dagh, Khirtar, which they regard as the natural frontier of their country. If the

priests, in their zeal for the purity of the faith, have forbidden the Brahmans to cross the Indus, this comparatively recent interdict must be attributed to the Mohammedan invasions, which have changed the religions in the north-west of India. Hence Brahmanical communities, still numerous in all parts of the Panjab lying east of the Indus, are very rare in the districts west of that river.

From the earliest historic times the Hindus were acquainted with the true form of the peninsula inhabited by them. When the geometricians accompanying

Fig. 5.—Form of India according to Ancient Documents.
Scale 1 : 28,000,000



Alexander's expedition arrived on the banks of the Indus, the reports received on the spot, which were afterwards repeated to the envoys of the Syrian kings, enabled them to project a map of the country perfectly correct in its main outlines. According to Eratosthenes, who availed himself of the materials collected by the Greek explorers, India has the form of an irregular quadrilateral, and the length assigned by him to its different sides coincides tolerably well with their real dimensions. But although there is nothing geometrical in the regularity of its contour,

its well-balanced proportions, between two seas on the east and west and a superb mountain barrier on the north, naturally tempted the Hindu geographers to exaggerate the rhythmical harmony of its outward form. From the description of the earth given by the sage Sanjaya in the Mahabharata, it has been supposed that the peninsula was by him conceived as a perfectly regular equilateral triangle, divided into four secondary triangles all of equal size. But in the same passage the "circle of the Jambu dvipa" is more poetically if less correctly compared by

Fig. 6.—Form of India according to Varaha-Mihira.
Scale 1 : 28,000,000.

Sanjaya to a warrior's rounded shield, and even to a four-petalled lotus. This last comparison between the country and the "sacred flower" seems to have been the most commonly accepted, and is most frequently alluded to by the Buddhist pilgrims from China. The astronomers of the sixth century of the vulgar era also recur to the same figure of the lotus, dividing India into nine parts, corresponding to the centre of the flower and its eight petals. The world itself was likened to an immense flower formed either of four, seven, or nine *dvipas* ("islands") or penin-

sulas, disposed in concentric circles round about Meru, the "Golden Mountain," abode of the gods. Each of these terrestrial circles was surrounded by an ocean formed by the rut of Priyavata's chariot wheels.

After the time of Alexander and the Seleucides the true form of India was forgotten by the Greeks, and the old documents became gradually distorted in the hands of subsequent naturalists. In the geography of Ptolemy, Cisgangetic India is no longer a peninsula. Broadening out east and west, it breaks southwards into numerous promontories, some of which figure more conspicuously than Cape Comorin itself. In spite of the longitudes and latitudes, India thus became more deformed by the Alexandrian geographer than it had been by the comparison with the mystic lotus flower. The degrees marked on the charts merely served to perpetuate errors, which held their ground until the real outlines of the seaboard were determined by the Portuguese navigators. Since Vasco de Gama's voyage the true form of the peninsula has been gradually re-established, and all the observations of previous explorers are found summed up in d'Anville's admirable map, which was published in the middle of the eighteenth century. But the first topographical surveys date only from the year 1763, with the studies of Rennell, "father of Hindu geography," on the plains of the Lower Ganges. In 1802 Lambton began near Madras the work of triangulation, which has not yet been entirely completed. This has been a stupendous work, conducted in the midst of all kinds of hardships and dangers from jungle fever and other causes more fatal than pitched battles. The mortality of soldiers in the Indian campaigns has always been less than that of the geographers engaged on the Indian surveys. The geodetic operations have now been extended beyond the Suleiman range into Afghanistan and Baluchistan. Northwards they are penetrating up the valleys and over the crests of the Himalayas, awaiting the time when the measurement of the great arc stretching from Cape Comorin to the Siberian headlands on the Arctic Ocean may be continued across the Tibetan plateau. Towards the east the network of triangles has also been pushed forward from Assam into Upper Burma, and has been connected with Bangkok through the Irrawaddi and Salwen basins. Two-thirds have already been completed of the chart in 177 sheets, embodying the surveys of India, of the west coast of Indo-China, and the Malay peninsula, while thousands of special maps and plans have revealed the geographical details of the land.

In its general relief Cisgangetic India consists of two triangular regions with a common base, but contrasting greatly one with the other. These are Southern India and the northern Gangetic plains, which Carl Ritter has compared to the Italian peninsula and the valley of the Po, surrounded by the semicircular barrier of the Alps. Nor is this the only instance in which the Asiatic and European lands resemble each other in their general outlines. Both continents are indented by three southern peninsulas corresponding severally one with the other in some of their main features. But while we remain ignorant of the real causes of these remote analogies, it must suffice to indicate them without recognising, as many do, a sort of mystic correspondence between the various divisions of the globe.

The Dekkan Tableland.

The Southern Indian triangle, whose coastline stretches from the mouth of the Narbadah to that of the Maha-naddi, is an upland region of plateaux and highlands, constituting the section of India to which the name of "peninsula" should have been restricted. The Dekkan, the ancient Dekshin or Dakshina-patha, that is, the south, or rather the "land to the right," looking eastwards, forms the central portion of this section, and varies in mean elevation from 1,000 to 3,000 feet, with a general inclination from west to east. The Dekkan consists almost entirely of a plateau of gneiss with transitional strata, which at one time formed an almost insular group, when Northern India was still partly a marine basin. But the primitive formations are covered for a space of over 200,000 square miles by masses of basalt traps, in some places more than 3,000 feet thick. These volcanic streams were accumulated during the chalk period and early eocene epoch, since when the Dekkan has been free from volcanic disturbances. But the work of denudation caused by the climatic vicissitudes of rains and winds, heat and cold, has in many places removed all traces of the igneous formations, which formerly covered a far wider range than at present. The surface of the traps has moreover been weathered and decomposed to a layer of laterite, a species of rock, which seems elsewhere to occur only in Indo-China, Malacca, and the Cape of Good Hope. It is a ferruginous clay, with a varying thickness of from 30 to 100 feet, stretching over interminable grey or reddish plains, which are clothed with a scant vegetation. The rain water rapidly disappears through the pores of this substance, leaving the slight surface soil always dry and thirsty. Thick layers of this formation, mingled with sand, gravel, and detritus of all kinds, have been swept by winds and rains from the plateaux down to the surrounding plains and valleys. Some of this laterite is found even on the seashore, washed up by the waves. It belongs mostly to a recent epoch, and is probably still in course of formation.

The Ghats and Anamalah Mountains.

The triangular tableland of the Dekkan is skirted on all three sides by mountain ranges. Of these the most regular are the Western Ghats, which, especially towards their northern extremity, also take the name of the Sahyadri Mountains. Interrupted at intervals by gaps and even broad depressions, the Ghats form collectively a series of parallel crests running west and east, and merging together on their western scarp. From the coast they present the aspect of a continuous eminence, whose steep slopes stretch parallel with the sea for a distance of 750 miles from the banks of the Tapti to Cape Comorin. They are separated from the sea by little more than a narrow strip of lowlands, here and there occupied by lagoons, or diversified by abrupt headlands projecting from the escarpment of the plateau to the foaming waters of the Arabian Sea. From the ports and coast streams of the Konkans, as this region is called, a prospect is afforded of the breaks in the hazy ranges, through which access is had to the opposite slopes. The verdant terraces,

which are ascended by the sharp windings of the routes and railways, present the appearance of the receding steps of colossal stairs, whence the name of *ghat*, or "steps," given to these mountains. Above the passes, the ramparts of lava terminate in circular prominences forming so many natural strongholds, many of which had been further strengthened and rendered impregnable by the rulers of the Dekkan.

The Western Ghats have a mean elevation of about 3,500 feet, falling in some places to less than 1,250, rising in others to upwards of 4,500. About 200 miles from the southern extremity they merge in the mass of gneiss and porphyry known as the Nilghiri, or "Blue Mountains," which attain an extreme altitude of 8,750 feet. These highlands are abruptly interrupted southwards by the Pal ghat, a broad gap or depression, which seems to have been an old marine channel, and which is commanded on the south by the Anamalah, or "Elephant Mountain," the culminating point of India proper. The Anamudi, which is the highest peak of these uplands, rises about 100 feet above the Dodabetta, the giant of the Nilghiris. When in search of teak forests in 1851, the English explorer Michael first penetrated into these magnificent highlands, whose gneiss and porphyry summits were visible from a great distance, standing out against the azure sky, but the approach to which was obstructed by a broad belt of marshy and fever-stricken woodlands. The Anamalah is continued south-eastwards by the Palni chain, which maintains an elevation of over 6,000 feet, and which merges in the extreme south in the lower range of the Cardamom Hills, so called from their chief vegetable product. These hills fall in gentle inclines down to Cape Comorin, where, as in the time of the early Greek navigators, yearly pilgrims still come to bathe in the mingled waters of the two seas, in honour of the *Kamari*, or "Maiden" Goddess Durga. The whole of the land south of the Pal ghat gap and of the river Caveri may be regarded as forming an independent highland system, almost isolated from the mainland, like the neighbouring island of Ceylon, which is itself partly connected with the continent by the reefs of Rama's Bridge (Adam's Bridge), and which belongs geologically to the Ghats.

The Eastern Ghats, which begin north of the Caveri valley, run, like the western range, parallel with the coast. But they have a much lower mean elevation, and are broken into numerous fragments by broad valleys and river gorges. With an average altitude of about 1,500 feet, these detached ridges form little more than the outer scarp of the plateau of the Dekkan, which, owing to its general easterly incline, is here considerably lower than on the opposite side. Going northwards, the first of these ridges is the Shivarai, which skirts the low-lying plains of Pondicherry, and the whole system terminates in Orissa with another group of "Blue Mountains," which fall to about half the height of the Southern Nilghiris.

The Satpura and Vindhya Ranges.

The northern limits of the Indian plateau are marked not by one, but by two border ranges, which, with several advanced spurs and groups of hills, form the

parting-line between the Dekkan and the northern plains of Hindustan. But the border chain, properly so called, is that which runs west and east to the south of the Tapti River valley, and which, towards the geographical centre of the peninsula, culminates in the Mahadeo uplands. Between the Tapti and the Narbadah runs

Fig. 7.—Altitudes of the Ghats and Dekkan.

Scale 1 : 12,000,000.

240 Miles.

the parallel Satpura range, whose western extremity, entirely of igneous origin, blends its metamorphic rocks eastwards in the rugged plateau of the Central Provinces. Towards the plains of the Ganges it merges in the basalt and laterite Rajmahal Hills and in the sacred mountain of Parasnath. This natural limit

of the plateau also forms an ethnological parting-line, dividing the Aryan-speaking populations of the north from the Kolarians and Dravidians of the south.

A study of the relief of the land leaves no doubt that the border chain of the peninsular plateau was formerly continued eastwards to the Garo Hills and the other highlands skirting the Brahmaputra valley on the east. The now vanished intermediate range was evidently pierced and gradually swept into the Bay of Bengal by the Ganges and Brahmaputra rivers. The gap thus made between the

Fig. 8.—View from Mount Abu.

two systems is no less than 120 miles wide. The South Assam chain also, which runs east and north-eastwards parallel with the Eastern Himalayas, is geologically connected with this system, consisting largely of the same tertiary sandstones and nummulitic limestones resting on older formations. It has a mean altitude of 4,000 to 6,000 feet, rising in the Shillong Peak to 6,450 feet. The various sections of these "Assam Hills," as they are often collectively called, are named after the Garo, Khasi, Jaintia, Kachar, Naga, and other tribes inhabiting them.

North of the Narbadah river, which is sometimes regarded as the dividing-line between the two great divisions of India, other ranges, grouped under the general designation of the Vindhyas, run from the western shores of the peninsula towards the plains of the Jamna. But taken as a whole, this system forms no distinct geographical frontier, none of its crests rising more than 500 feet above the mean level of the surrounding lands. From their western extremity the Rajput spurs project north-eastwards, in the direction of the rocky Aravalli Hills, while the almost isolated Mount Abu, crowned by some of the holiest shrines in India, rises above the desert plains stretching thence towards the Lower Indus. The Gujarat Hills may also be regarded as belonging to the system of the Vindhyas.

Nearly all the rocks of Southern India are very ancient, and amongst them are found the richest carboniferous beds, as well as the most valuable deposits of mineral ores. In the Talchir Hills, between Orissa and the Central Provinces,

Fig. 9.—Section of the Indian Peninsula North of the Dekkan.
Scale 1 : 12,000,000.

Scale of heights fivefold that of distances

240 Miles.

geologists have observed clays of glacial origin associated with rocks scored and polished by the action of ice. This is a further proof of the existence of a glacial period in tropical lands lying at slight elevations above sea-level. The close resemblance of the fossil flora in the carboniferous strata of Southern India with that of Australia also shows that these regions, now separated from each other by a distance of over 5,000 miles, must, at some remote period, have formed parts of the same continent.*

The Northern Plains.

The great northern triangular plain, formed by the two basins of the Lower Ganges and Indus, together with all the intervening spaces, has a total length of nearly 1,500 miles, a distance equal to that of Paris from Moscow. This is the region to which the Persians had specially given the name of Hindustan, a name now

* Henry Blandford, *Quarterly Journal of the Geological Society*, November 1, 1875.

commonly applied to the whole peninsula. Although less extensive than the southern plateaux and highlands, and although between the Aravalli Hills and the Indus partly occupied by completely uninhabited arid wastes, this is by far the most densely peopled division of the country. Fully 160,000,000 souls are concentrated in the well-watered northern lowlands, while scarcely 100,000,000 are found in the whole of the Dekkan and its geographical dependencies.

Owing to the great contrast presented by the two regions, the history of their inhabitants necessarily followed different lines of development. The northern basin, generally level and fertilised by numerous navigable waters, naturally became the centre of culture for all the surrounding nations. These productive plains were soon occupied by numerous agricultural settlements; here were founded many flourishing trading marts; here the industries were rapidly developed; here civilisation achieved some of its greatest triumphs. But here also successive invasions led to the most violent conflicts, and brought about a constant intermingling of races. Forming a vast basin, surrounded on all sides by more elevated lands, the Indo-Gangetic plain, like that of Northern Italy, was necessarily exposed from the first to the inroads of all the neighbouring peoples. On the west the Afghans, and even invaders from beyond the Hindu-Kush, found broad openings in the encircling ranges leading down to those rich plains and magnificent cities, which ever overflowed with treasures during each short interval of peace. On the north the warlike highland populations were separated only by a narrow marshy zone from the cultivators of the plains. On the east, also, the wild tribes of the hills, through which the Brahmaputra escapes seawards, beheld an inviting and easily accessible field of plunder spread out before them. For ages the inroads were incessantly renewed, now from one point now from another, while these hostile incursions at times developed into vast migrations of whole races.

Thus it was that throughout the historic period the populations of the Indus and Gangetic plains were till recently subject to constant fluctuations. Hence the primeval races and languages are now no longer found in these regions that have been so frequently wasted by fire and sword, whereas the densely wooded uplands and valleys of Southern India have preserved pure from foreign contact many communities which still retain the same physique, speech, and habits of two thousand or three thousand years ago. But as the hives became too crowded, these communities necessarily swarmed abroad, and their migrations, whether warlike or peaceful, were naturally attracted to the fair cities of the plains, whose glittering domes were visible from their very fastnesses. In this respect a contrast, although on a smaller scale, has been observed in India analogous to that presented by France. Both regions have their concentrating focus in the north, their centre of diffusion in the south. But the emigrants from the plateaux and highlands gravitated not only towards the north, but also towards the low-lying coastlands of Coromandel and Malabar. From the upland regions of the interior the population increases gradually towards the seaboard, where towns and villages follow in rapid succession. In Southern India, also, the military expeditions, the shiftings of the inhabitants, the development of states, in a word the historic movement,

naturally took place chiefly on the slope inclining towards the Bay of Bengal, where are found the broadest plains and valleys, and in which direction flow most of the great rivers.

The Himalayan System.

The Himalayas, which are sometimes regarded as a portion of Hindustan, constitute in reality a world apart, Indian in its vegetation, its climate, and the streams it gives rise to; Tibetan in the vast plateau formation of which it forms the southern escarpment. But the Himalayas also form a continuation of the continental axis, and the expression "Roof of the World," usually restricted to the Pamir, belongs in reality to all the plateaux and ranges occupying the heart of the continent from the Hindu-Kush to the Alpine region of Sechuen, from the Tian-shan to the Assam highlands. These dividing lines, which have a total development of several thousand miles, constitute, so to say, a distinct continent superimposed on that formed by the surrounding lowlands of Lower Asia. The great geographical divisions are naturally those defined by their prominent masses. In the north-west the vast depression of Asiatic Russia begins with the Oxus basin; in the north-east the deserts of the Tarim region are continued eastwards by the low Mongolian plateaux and the plains of China; in the south-west, Afghanistan and Persia are sheltered by the Hindu-Kush; while the deep basins of the Indus and Ganges open southwards and south-westwards.

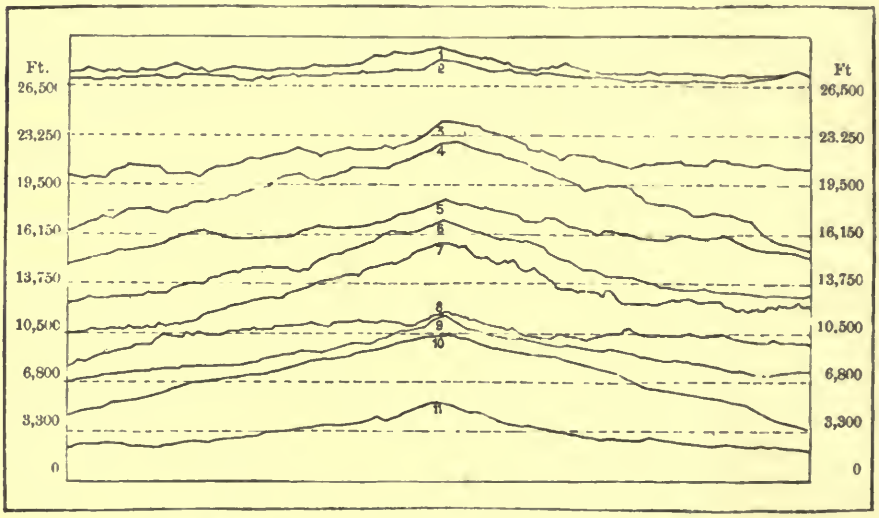
Of all these sections of the ramified uplands of High Asia the most elevated, if not in mean altitude, at least in the absolute height of their peaks, are probably the Himalayas, although it is impossible to speak positively on this point, pending a scientific survey of the culminating elevations of the Tibetan plateau, of West Sechuen, and even of parts of the Trans-Himalayan highlands. At the beginning of the present century the English explorers were still unaware of the relative importance of the snowy ranges which they beheld towering above the plains of the Ganges. After the expeditions of Bouguer and De la Condamine to the equatorial Andes, Chimborazo was supposed to be the culminating point of the globe, although it cannot claim pre-eminence even in South America itself. Nevertheless Sir William Jones, in a memoir written in 1784 and published twenty years subsequently, had expressed the opinion that the Himalayas are the highest in the world. In 1805, Crawford for the first time measured some of the giants overlooking the valleys of Nepal, and declared them to be far higher than the Andes. But he was contradicted by some of his own countrymen, and the manuscript of his journey having been lost, the point was not definitely settled till 1845, when the trigonometrical survey of the Western Himalayas and of the Sikkim highlands was carried out under the direction of Andrew Waugh. The same naturalist also surveyed and measured Mount Everest (Gaurisankar, the "Radiant"), which attains on the Tibeto-Nepalese frontier the highest known elevation on the globe, that is, nearly 5½ miles, or about twice the height of Mount Rosa. At a corresponding depth of about 5½ miles, the officers of the *Tuscarora* discovered off the east coast of Japan the greatest known oceanic abyss. The extreme divergence of relief between the

culminating point and greatest depression on the earth's crust is thus nearly 11 miles, or some 57,000 feet.* Relatively to the globe itself, these are perfectly appreciable inequalities, the altitude of Gaurisankar representing about the 720th part of the terrestrial radius.

Although the Hindus were certainly acquainted with all the great eminences rising above the southern edge of the Tibetan plateau, they do not seem to have had any clear idea of the true form of the Himalayas themselves. Lost in contemplation of these magnificent ranges, which they commemorated in song, and peopled with a thousand genii whirling round their snowy peaks in the morning light, the Brahmans could not desecrate such hallowed sites by scientific observation. Hence

Fig. 10.—Comparative Heights of some of the Great Mountains of the Globe.

Scale 1 : 150,000.



1. Gaurisankar.
2. Dapsang.
3. Khan-tengri.
4. Aconcagua.
5. Flbruz.
6. Ararat.
7. Mt. Blanc.
8. Maladetta.
9. Etna.
10. Olympus.
11. Puy de Dôme.

3 Miles.

the difficulty of identifying the various mountains whose names occur in the old writers, and the absolute impossibility of harmonising their descriptions with the true relief of the land; for they are continually in quest of symmetrical forms, which are nowhere to be found in nature.

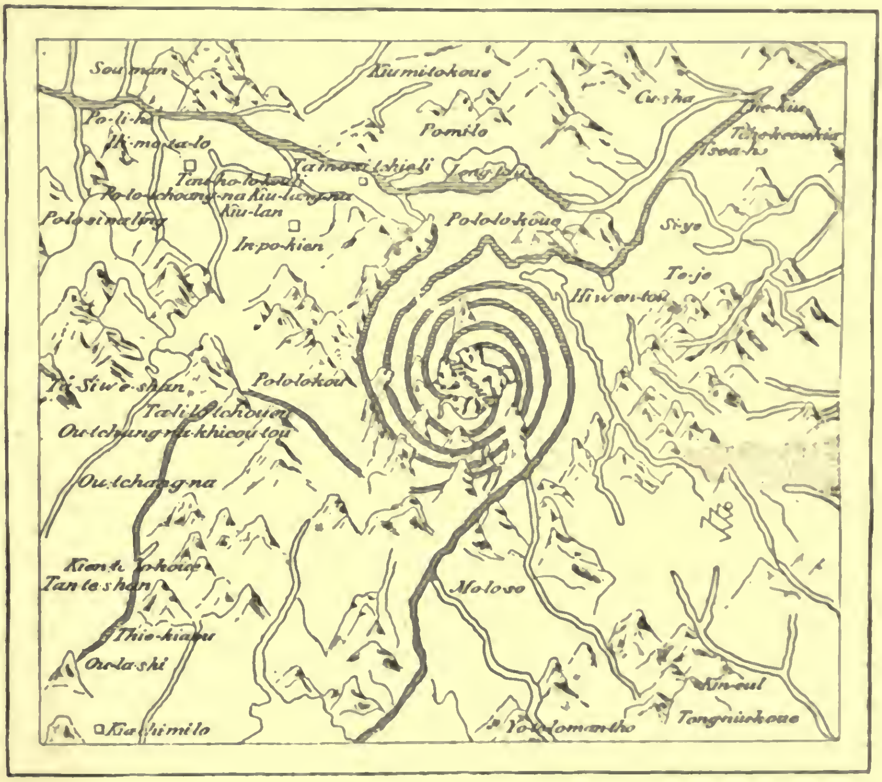
Nevertheless, it is certain that the masses to which modern explorers give the foremost rank were not those which they regarded as the most prominent. Like the wayfarers of Central Europe, who were led by the course of the great rivers—Rhine, Rhone, Ticino—towards the St. Gothard, which they naturally took for the highest point of the Continent, the pilgrims from India, following their great rivers,

* Height of Gaurisankar	29,002 feet
Deepest sounding of the *Tuscarora*	28,110 „
Total . . .	57,112 „

Sindhu, Satlej, Jamna, Ganges, fancied that the inaccessible heights between the sources of these sacred streams must be the abode of the immortal gods, whence they contemplated the lower terrestrial regions. Here rise Meru, the "golden mountain," Srigavat, "clothed with all the minerals," the Kailas, "formed of precious stones," and Nila, "made of lapis-lazuli," as described in the Mahabharata.

The legends associated with this mysterious region became more numerous from age to age, until all the realities disappeared at last beneath a tissue of fable. Thus when the Chinese pilgrim Hwen-tsang visited India in the seventh century of our era. Aneuta, or Sumilu, that is, the mountain made of four precious things, was

Fig. 11.—Winding of the Sacred Streams round Mount Aneuta.



represented as resting on a golden wheel and washed by the waters of a vast ocean. From its flanks rushes the "everlasting sea," divided into four sacred streams, which flowed round and round in concentric valleys, in order to linger as long as possible near the mother mountain. Such valleys are the remains of the ruts traced by the chariot-wheels of the gods.

Through a natural feeling of awe for all things unrivalled, those who contemplate the Himalayas are always ready to fall into ecstasies of admiration at the incomparable beauty of the glittering crests, beyond which stretch the dreary plateaux of Tibet. But even were they inferior in elevation to the Andes or Caucasus, these stupendous barriers would none the less present one of the most

imposing panoramas in the world. Their magnificence is greatly heightened by the superb outlines of their summits, soft and hazy as seen from the plains of India, looking like so much play of light rather than enormous masses of adamantine rock. Nearly all the famous spots frequented by travellers to enjoy a wide prospect over the ranges, stand already at great elevations, and often rise sheer above profound chasms. From the forests of the sub-tropical lands, which seem plunged into deep abysses, the eye of the observer sweeps upwards to the slopes clothed with the vegetation of the temperate zones, beyond which still rise the Alpine pastures and the snowy peaks, whence these ranges take the various names of Himalaya, Himavat, Himadri, Himachala, Himodaya (Aemodus, Imaus).

In the vast amphitheatre of hills rolling away beyond the horizon, the peaks and crests up to about the altitude of the European Mount Blanc are still grey with débris or green with a grassy vegetation for a part of the year; but a little higher up the slopes are covered with perennial snows. Above the enormous base of the green or rocky Alps rise other heights, which are always white, except when gilded by the sun or darkened by the falling shadows, and towering above these masses of snow-clad pyramids appear the inaccessible topmost summits, whence, should they ever be ascended, a prospect will be commanded of the Tibetan plateaux, of the plains of India, of the valleys watered by the Tsangbo, Ganges, and Jamna.

The parting line between the Himalaya, the Karakorum, and Hindu-Kush, which form collectively the "Rocky Girdle of the Globe," is purely conventional. The vast region, some 240,000 square miles in extent, limited by the plateaux of the Pamir and Tibet, by the plains of Yarkand and the Panjab, is, in fact, everywhere intersected by lofty ranges. With the exception of a few lacustrine basins still flooded or already drained, and of some deep river gorges, the whole land forms a labyrinth of chains and ridges variously connected with the encircling main ranges. Thus the three orographic systems overlap or interpenetrate each other, either by their geological formation, the form of their relief, or the mean direction of their axes and side chains. Nevertheless, the Himalayas may in a general way be said to terminate south of the Gilgit valley. They scarcely extend beyond the Indus, and the gorge through which this river escapes from the upper valleys lies nearly under the same meridian as the nucleus of hills where the Hindu-Kush branches off to the Karakorum and Kuen-lun. West of the Indus the normal direction of the axes is south-west and north-east, whereas east of that river they run in the opposite direction, north-west and south-east, parallel with the upper valleys of the Indus and its tributaries.

The eastern limits of the Himalayan system have scarcely yet been definitely determined. Most writers, accepting Rennell's views on the identity of the Tsangbo and Brahmaputra, extend it to the gorge through which this river escapes to the plains of India. But this must remain a mere supposition until the country has been actually explored. It is meantime certain that in East Bhutan the ridges crossed by Nain-Singh still belong to the Himalayan system, and that 300 miles farther east the mountains running north and south along the banks of the Lutze-

kiang or Salwen form part of a different orographic system. Further exploration is needed to show how the Himalayan and East Tibetan frontier highlands are connected or separated by intervening ranges.

The general sweep of the outer scarp of the Tibetan plateau has been compared to that of a scimetar, with its convex side turned towards the southern plains. It certainly exceeds 1,300 miles in length, with a mean breadth of at least 150 miles between the advanced spurs of the Gangetic plain and the deep depression traversed by the Tsangbo. The space occupied by these highlands is thus considerably larger than the whole of France, and taking their mean elevation at no more than 13,000 feet, the entire mass, if uniformly distributed, would represent about 60 feet in thickness of the earth's crust, even excluding the border chain properly so called of the lofty plateau of Katchi. This border chain, running parallel with the Himalayas, forms a continuation of the Karakorum mountains, and is prolonged under diverse names north of the source of the Satlej and of the Tsangbo valley, merging south of the Tengri-nor in the Ninjin tang la highlands. This range, which is the Gang-dis-ri of Klaproth and subsequent writers, contains the pyramidal Mount Kailas, one of the most famous mountains of Hindu mythology. Although lying beyond the Himalayas of geographers, and reflecting its snowy crest in the waters of Lake Mansaraur, Kailas is the most sacred mountain in the poetic and religious history of the Aryan Indians.

The Himalaya Proper and Trans-Himalaya.

Excluding the Gang-dis-ri, the Himalayas consist of two parallel ranges, the Himalaya properly so called, that is, the southern chain rising immediately above the plains of India, and the Trans-Himalaya, limited northwards by the depression of the Tsangbo River. Of these two ranges the Trans-Himalaya must be regarded as forming the true parting line, although its chief crests seem to be exceeded in height by those of the southern range. For a distance of nearly 500 miles its various sections follow in close succession, without leaving a single gap for the waters to escape which traverse the depression between the two ranges. On the other hand, the southern chain, above which rise the colossal Chamalari, Kinchinjinga, Gaurisankar, Davalaghiri, is pierced by deep valleys and gorges, affording outlets to numerous tributaries of the Ganges—Kosi, Gandak, Karnali, Kali—besides its two head-streams, Alaknanda and Baghirati ganga. This range is thus cut up into a number of sections, some of which present the appearance of completely isolated and irregular masses.

Immediately west of the sources of the Ganges a fissure, deeper than any of the preceding, is opened, not only across the Himalaya proper, but also across the parallel northern chain. The barrier is thus entirely pierced by the course of the Satlej, which, after following the general direction of the main Himalayan axis from the south-east to the north-west, escapes through a series of gorges to join the Indus towards the south-west. Farther on, the Chinab, a smaller stream than the Satlej, rises between the two chains, and has, consequently, to pierce the

southern barrier only. Such is also the case with the Jhilam, which has its source in the Kashmir basin. But the Indus itself receives its head waters on the Tibetan plateau north of the whole Himalayan system. Like the Satlej, it flows first north-west in search of an outlet, but finds no opening till it approaches the southern spurs of the Hindu-Kush. The Shayok, or "female Indus," by which it is joined far above this outlet, has its farthest northern sources in the Karakorum highlands.

The whole western slope of Tibet has thus been cut by erosions into distinct fragments generally running in the direction of the two Himalayan main ranges. But so numerous are the ridges and so intermingled their ramifications, that it becomes difficult everywhere clearly to recognise their normal direction. The Himalaya proper is continued beyond the Satlej by the hills limited northwards by the sandy deposits and slopes of the Spiti valley, beyond which point it merges in the chain which traverses South Lahul and Panjal, and which skirts the south side of the valley of Kashmir. This is the chain to which Cunningham gives the general name of the Middle Himalaya, and which for a portion of its course is flanked on the south by the Dhaola-dhar, or "White Mountains."

The Trans-Himalaya is similarly continued by the Bara-lacha or Zanskar range, rising just east of the gorges of the Indus to the superb Nanga Parbat (Diyarmir), north-western limit of India. In this western section of the system the highest peaks are found in the Trans-Himalaya, north of which another chain—which, from the town lying at its northern base, might be called the "Leh Mountains"—forms an almost isolated mass, limited on one side by the Indus, on the other by the Shayok, the Pangkong, and an influent of this brackish lake.

The Karakorum Range.

Lastly, the Karakorum itself, which has been broken into separate sections by erosive action, resembles the parallel Himalayan ranges in the form and direction of its relief. But its peaks are far more elevated than those of the Western Himalaya, its passes are much more difficult, and the snows and glaciers, whence it takes the name of Mus-tagh, or "Ice Mountains," cover a much larger surface than those of its southern rivals. The Dapsang, its highest point, is exceeded only by Gaurisankar, and the passes leading from the Indus to the Kara-kash, or Yarkand-daria valley, have a mean elevation of no less than 19,000 feet, whereas those crossing the Himalaya and Trans-Himalaya fall to about 18,000 feet, an elevation which still exceeds that of Mount Blanc by 2,000 feet.

Forming the true water-parting between the Indus and Tarim basins, the Karakorum has from this very fact become the true northernmost limit of India. The whole region of highlands and deep valleys forming a north-western extension of the dreary plateaux of Great Tibet, and a portion of which is occasionally known by the names of "Little Tibet," "Apricot Tibet," or "Kashmirian Tibet," has been thus brought within the sphere of Indian history, and now belongs to the British political system through its present ruler, the Maharajah of Kashmir.

India, regarded as a group of states politically dependent on England, has thus also become conterminous with Chinese Turkestan, at the passes over the Karakorum. But east of Kashmir the frontier of British India, Nepal, and Bhutan is marked throughout most of its course not by the continuous chain of the Trans-Himalaya, but by the more fragmentary masses of the Himalaya proper.

Passes.—Geological Formation of the Himalayas.

The gaps through which the rivers escape southwards are too rugged and rocky to be followed by the trade routes, which are thus almost exclusively restricted to

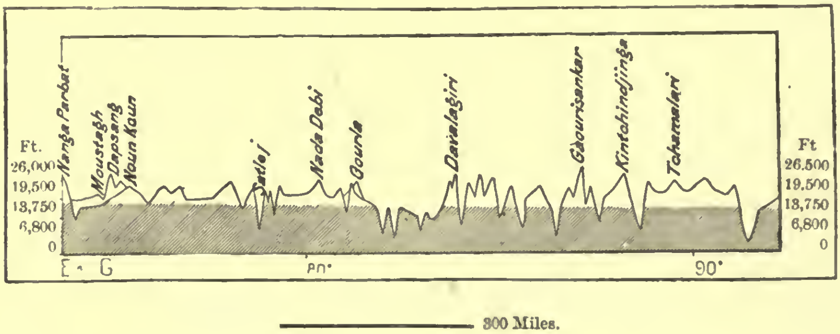
Fig. 12.—Erosions of the Spiti River near the Parang Pass.

the passes between the snowy crests in order to reach the Tibetan plateau. The lowest depressions between the opposite slopes occur sometimes in the Himalaya, sometimes in the Trans-Himalaya and the intervening space. These openings, which are lower than those of the Karakorum, have also the advantage of lying some 6 or 8 degrees farther south. Yet most of them are none the less completely

obstructed during the south-west monsoon, which is here accompanied by terrific snowstorms. Such is the difference of climate between the plateaux and the southern plains, that the inhabitants of the respective regions would be nearer neighbours were they separated from each other by a broad arm of the sea. The Hindu lowlanders had in former times to defend themselves, not against the people of the Tibetan tableland, but against the inroads of the warlike hill tribes of the outer slopes and valleys, from 8,000 to 10,000 feet above sea level, beyond which stretched the almost uninhabited zone of rocks, alpine pastures, and eternal snows. Those travellers alone, who have been long habituated to the rarefied atmosphere of great elevations, can venture across the Himalayan passes, where the least effort becomes extremely painful. The natives say that the wayfarer is poisoned by the pestiferous exhalation of the *bis*, or *soran*, which they suppose to be either a flower of the aconite order or a peculiar vapour emitted by the mountain. The brothers Schlagintweit were the first Europeans who, in 1855, crossed the Ibi Gamin Pass, which stands at an altitude equal to that of the Puy de Dôme, super-

Fig. 13.—Longitudinal Section of the Himalayas between the Indus and the Brahmaputra.

Scale 1 : 20,000,000.



imposed on Mount Blanc. Since then a still higher pass, lying at an elevation of 23,000 feet, has been traversed by Johnston, and this exploit has hitherto been rivalled only by aeronauts.

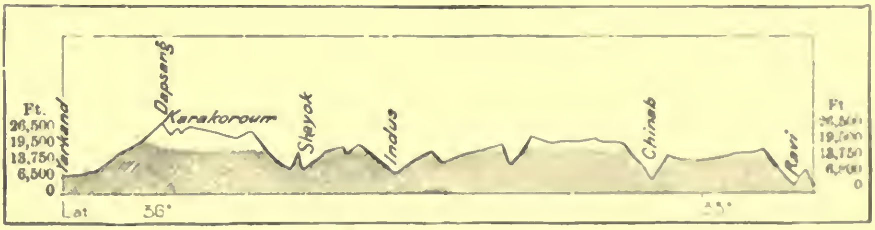
The Himalayan system seems to be of more recent origin than the Kuen-lun. As far as can be judged from the observations of the few travellers who have visited its western section near Khotan, this backbone of the Asiatic continent appears to be also its most ancient protuberance. It is said to consist mainly of primitive rocks, whereas all the ranges south of it belong to comparatively modern geological epochs. Granites, properly so called, are rare in the Himalayas, the crystalline formations constituting their central mass being mostly either gneiss or metamorphic schists. In Miocene times some of the Himalayan districts must have stood at a very moderate elevation above the sea, and were then in the enjoyment of a climate as temperate as that of Central Europe. In Tibet the fossil remains of a hippopotamus have been found at a height of 16,000 feet, although fossils belonging to the whole series of rocks from the Silurian epoch onwards have

also been discovered in the stratified formations. Here and there igneous matter has cropped out through the upper deposits, but no trace has anywhere been detected of volcanic cones or craters.

The Sub-Himalayas.

But whatever be the age of the two Himalayan main ranges, the rocks formed on the southern slopes of the mountains facing the plains of India date only from the later tertiary epoch. Running parallel with the chief continental axis, these sub-Himalayan advanced chains consist almost exclusively of sandstone masses, diversely associated with argillaceous clays and conglomerates. From the banks of the Brahmaputra to the Indus these chains follow in regular succession, first westwards, then north-westwards, interrupted at intervals only by the "gates" or gaps produced by the torrents escaping from the longitudinal valleys at the foot of the higher ranges. In some places the water, flowing from the upper glaciers and

Fig. 14.—Transverse Section of the Western Himalayas.
Scale 1 : 4,500,000.



Scale of heights fivefold that of distances
120 Miles.

forming shifting streams, alternately uniting and separating their pebbly beds, has been sufficient to sweep away considerable hilly tracts in the advanced sub-Himalayan ranges.

Of these sub-Himalayan ranges, the most important and regular is the Sivalik, which runs south-east and north-west for over 180 miles between the gate of the Ganges at Hardwar and that of the Bias, one of the "five rivers" of the Panjab. This section is cut by the Jamna and Satlej into fragments unequal in size, but all resembling each other in their geological character, as well as in the form of their escarpments and ravines. Here the so-called *doons*, or longitudinal valleys, analogous to *doars* of Bhutan and *maris* of Sikkim, which are separated by the Sivalik range from the plains of India, are the beds of old lakes which have been gradually drained by the rivers flowing southwards. Some of these deep troughs are too contracted and too overgrown with jungle to present picturesque landscapes. But others have been transformed to pleasant tracts resembling the English park lands in their rich verdure, the clumps of trees scattered along the streams, and the charming outline of the hills crowned with rural hamlets. Formerly the waters of the now dried-up lakes frequently washed up the bodies of huge mammals, whose

remains are now found in the sandstone strata of the Sivalik, or Sivalaya. Amongst these animals, some of which have here been discovered for the first time, the most remarkable is the powerful sivatherium, which, like the hills themselves, takes the name of Siva, the god, who incessantly destroys and renews the earth by fresh creations.

Taken as a whole, the Himalayas present a certain uniformity of aspect. They are more imposing for their massive grandeur than attractive by the variety of their forms. Those alone who penetrate far into the "Abode of Snow," and who succeed, with much labour, in reaching elevations as lofty as the highest peaks of the European Alps, can form any adequate idea of the serene majesty of these highlands, which, to the inhabitants of the plains, seem to glitter in the bright sunshine like mighty walls of metal bounding the distant horizon. In the midst of these boundless solitudes, at altitudes thousands of feet above the dwellings of man, peaks are seen still to rise one above the other, commanding unlimited wastes of rocks, snow-fields, glaciers, moraines, on a scale of grandeur elsewhere unrivalled. In the language of the Vedas, here is "a third world," differing altogether from the other two consisting of the lower valleys and the plain. But between the region of eternal snows and the forest zone scarcely anything is to be seen except bare grey crags disposed at different elevations. The rocks have everywhere been weathered or worn away by water and avalanches, preventing the growth of herbage like that of the European Alps, except in a few favoured spots. For a vertical space of several thousand feet whole mountains present from base to summit a uniform surface, here and there slightly scored, like the tarnished and scratched facet of some gigantic crystal. Thus the Rakiposh, one of the western peaks of the Karakorum, raises its naked walls at one spring over 3 miles above the gorges at the confluence of the Gilgit and Hunza.

At altitudes of 16,000 feet and upwards most of the humidity falls in the form of snow, and all the summits of the main range are covered with perpetual snow and ice. But lower down the south-west monsoon brings mainly torrents of rain, and even at a height of 14,000 feet snow scarcely ever falls on the Sikkim highlands in summer. Altogether the snow-line descends lower on the slopes of the Eastern than on the Western Himalayas, although the latter lie much farther from the equator. This is due to the greater abundance of moisture which falls on the section of the range situated near the Bay of Bengal. Much of this moisture takes the form of snow, which never entirely melts, so that snow-fields have been developed even on the south-eastern portion of the system. On the Kumaon mountains, in the Central Himalayas, the snow-line lies at about 16,000 feet, whereas in Kashmir it rises to at least 18,500 feet. In the month of October the brothers Gerard found nothing but fresh snow on Porgyal, a mountain 19,700 feet high close to the Tibetan frontier, and a neighbouring peak over 20,000 feet high was quite bare. The slopes facing northwards have even less snow than the opposite side, while some of the lower chains lying between the outer barriers receive none at all.

Glaciers and Erosions of the Himalayas.

The glaciers of the Himalayas do not yield in extent to those of Greenland and other arctic regions. The most favourable conditions for the development of large ice-fields are found in the cirques and valleys of the western section, where the lower limit of perpetual snow lies at the greatest altitude above sea level. The difference is due to the rapid melting of the snows in the uplands lying nearest to the equator, where, although the snowy masses are thicker and relatively more extensive, they are transformed under the sub-tropical suns directly to running water without passing through the intermediate stages of snowfields and long glaciers. The north-western ranges with their numerous gently sloping side valleys, where the snows remain constantly sheltered from the solar rays, are also better disposed to develop slowly moving glacial streams than are the more abrupt slopes of the Eastern Himalayas. The Zanskar or Bara-lacha chain, running

Fig. 15.—The Baltistan Glaciers.
Scale 1 : 1,600,000.

30 Miles.

north-west towards Kashmir between the tributaries of the Indus and Chinab, is entirely fringed by glaciers, many of which are over 15 miles long, thus exceeding in extent the Aletsch, which is the largest in Europe. But these frozen rivers are themselves surpassed by those of Baltistan, which drain from the Karakorum down to the head waters of the Shayok and Indus. The *gansé* or glaciers of the Saichar, Baltoro, Biafo, and Chogo are all over 30 miles long, and they are themselves joined by dozens of secondary glaciers, each at least as extensive as the largest in the Swiss Alps, and presenting altogether a continuous ice-field probably 90 miles long at its upper edge.

The phenomena observed in the European glacial regions are also met on a far larger scale in the Himalayas. Excellent opportunities are thus here also presented for the study of crevasses, "seracs," "moulins," medial, lateral, and frontal moraines. But the Karakorum and Himalayan glaciers are distinguished from those of the Alps especially by the vast quantities of débris carried by most

of them, and almost completely covering their lower course. The masses of rock concealing the ice everywhere except on the exposed sides of the crevasses, are themselves covered with layers of earth overgrown with herbage and numerous alpine plants, which often convert the ice-fields into veritable gardens. The Baltoro glacier, one branch of which rises in the snowy slopes of Dapsang, is entirely hidden in its lower parts by a vast accumulation of detritus formed by the confluence of fifteen moraines of grey, brown, yellow, red, or bluish rocks, all disposed in parallel lines with the crystal stream.

The lower Himalayan valleys preserve the traces of ice-fields far more extensive than those still surviving. Here and there may be seen lateral moraines lining terraces many hundred feet above the present river beds. Even some frontal moraines resisting the force of the current have been preserved in valleys no more than 5,000 feet above sea level. Frozen rivers descended at one time from the Karakorum down to the Kashmir basin, over 120 miles from their source, and that of the Nubra, a tributary of the Shayok, was no less than 4,500 feet thick at the junction of the two streams now dotted over with flourishing hamlets. In the southern section also of the Himalayas, the Kangra valley, watered by the river Bias, is strewn with erratic boulders of glacial origin. The central current of this valley, fed by secondary glaciers from the Dhaola-dhar range, was over 110 miles long. But the evidences of the former glacial epoch disappear in the Himalayas more rapidly than in any other highland region, in consequence of the rapid action of running waters in the tributary valleys of the Indus and Ganges. The silicious rocks of the higher crests and middle slopes, as well as the sandstones of the sub-Himalayas, are extremely friable, and easily yield to the erosive action of streams. The gneiss formations also are readily disintegrated under the alternate influences of frost, heat, and rains, while the accumulated débris of the old moraines are swept with every freshet farther down towards the outlets of the valleys.

The beds excavated by the Himalayan rivers either in these débris or in the live rock attain in many places a depth of 3,000 feet below their old banks, and the smaller affluents have had to score the hill-sides to depths of 1,500 or 1,600 feet in order to reach the main stream. Remarkable instances of these tremendous erosions are afforded by the Satlej in its upper course on the Tibetan plateaux, lower down by the Indus and its various affluents in Ladak, and by the Ganges above Hardwar. Nowhere else are suspension bridges more necessary, or more easily constructed, many of the river gorges, although hundreds of yards deep, being scarcely more than a stone's throw wide. In the southern valleys these contrivances, like those of East Tibet, are mere *chuka*, or ropes with a ring, by means of which the traveller glides from bank to bank. But most of the *Jhula*, or true suspension bridges, are formed of strong interlaced cables of bark and twining plants, which vibrate in the air, yet are so substantial that the steady passenger may fearlessly cross them. They last usually about three years, and serve even to transport sheep and goats.

In the greyish sub-Himalayan rocks the destructive action of water is revealed chiefly by the formation of vertical walls, from which huge masses occasionally

break away, producing the effect of artificial strongholds, with turrets, enclosures, and regular terraces. Many of these natural citadels are unsurpassed in symmetry of form either by the cubic masses of "Saxon Switzerland" or by the rectangular blocks occurring in certain parts of New Mexico and Colorado. Other rocky masses, with surfaces several hundred and even several thousand square yards in extent, consist of superimposed receding layers, presenting on all sides the appearance of pyramids with gigantic steps.

The work of disintegration, traces of which are everywhere visible, is still going on throughout the Himalayas, and remarkable examples are afforded especially by the contemporary history of the Indus, Chenab, and Satlej. Arrested in their upper course by avalanches of snow and débris, these three rivers are often converted into lakes, while below their temporary dams the beds soon dry up. But in a few days, or it may be weeks, the pent-up stream succeeds in bursting through its barrier, sweeping down vast quantities of mud and detritus, wasting the riverain tracts, uprooting trees, razing houses, and spreading ruin far and wide.

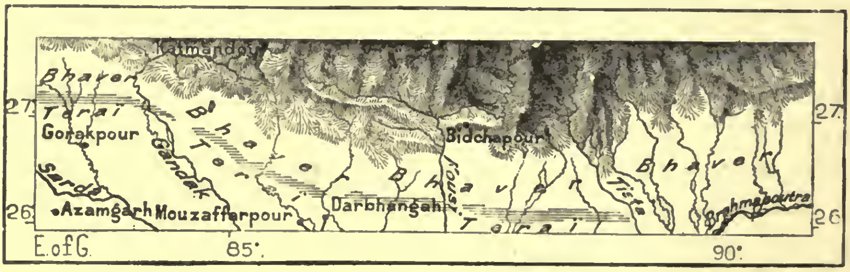
From these phenomena of erosion the Himalayan rivers have acquired a normal curve, while the waterfalls and lakes have all been effaced, which formerly checked their course. In this respect the Himalayas offer a marked contrast to the European Alps. They have, so to say, passed their period of youth, all the primitive features of the valleys having been already completely obliterated. The rocky ledges at one time damming up the waters in their lacustrine beds, and over which the stream fell in cascades and rapids, have been gradually worn down, thus allowing the lakes to escape, and lowering or sweeping away the waterfalls. At present the Himalayas proper contain but few of those flooded basins which impart so much charm to mountain scenery, while most of the falls have been converted into mere temporary cascades, or simple streaks of snow-water melting in the summer sun, and rapidly evaporating farther down. The only large lakes are now found in the depression between the Himalaya proper and Trans-Himalaya, and farther west in the numerous parallel valleys of Ladak and Kashmir. But even here many lacustrine basins have diminished in extent, not so much through the gradual lowering of their outlets, as through the gradual desiccation of the land. Some of the lakes in the Western Himalayas have already become closed basins without any outflow, and have thus been slowly changed to reservoirs of salt water. Extensive depressions formerly flooded by fresh water have shrunk to mere brackish tarns encircled by saline efflorescences, which at times blend imperceptibly with the surrounding snows.

The Terai, Bhaver, and Doons.

On the Himalayan slopes the vegetable naturally correspond with the climatic zones. With every 600 or 700 feet of altitude the heat diminishes one degree Centigrade, while all the conditions of the climate are correspondingly modified. The tropical and sub-tropical plants at the foot of the ranges are succeeded higher up by those of the temperate zone, which in their turn give place to an arctic vegetation. But besides these great climatic and vegetable divisions, such as are

observed in all highland regions, at the base and on the first eminences of the Himalayas other zones occur, which are sharply defined by the nature of the soil and its products, and which owe their contrasts not to differences of relief, but to the disposition of the surface strata and drainage. These zones, with which the native stockbreeders have at all times been well acquainted, follow in parallel succession the axes of the hills from the lower plains to the first escarpments. The southernmost of these belts is the so-called *terai*, *tarai*, *tari*, or *morong*, that is, "moist land," a marshy region overgrown with dense jungle, reeds, and thickets, which impede the atmospheric currents, and confine the miasmatic exhalations sucked up by a tropical sun from the dank soil. According to the native reports, the atmosphere in some parts of the terai is too stifling even for the wild beasts and birds. But north-westwards this zone is gradually contracted, shrinking in the Panjab to a sandy tract, where the water rapidly disappears, and intersected at

Fig. 16.—Zones of the Terai and Bhaver.
Scale 1 : 8,000,000.



130 Miles.

intervals by numerous ravines. The thickets of the terai proper are here replaced by tall grasses, affording a refuge to the antelope.

The parallel zone stretching between the marshy lands and the foot of the sub-Himalayan sandstone formations presents in its dryness a marked contrast to the terai. This is the so-called *bhaver*, *bhabhar*, or *jhari*, a forest region almost entirely covered with the sal (*shorea robusta*), a fine tree, whose symmetrical branches are interlaced by twining creepers and connected with the undergrowth. The *doons*, *doars*, or *maris*, stretching parallel with the terai and bhaver, from which they are separated by the advanced sandstone ridges of the Himalayan system, are also almost everywhere insalubrious. Even a rapid ride from the plains across the three parallel belts of the terai, bhaver, and doons, to the uplands, is not unattended with danger, and many an Englishman has fallen a victim to the fevers contracted in these malarious tracts while escaping to the higher grounds from the heats of the lower Gangetic provinces. In some places the contrast between the terai and the arable lands is as sharp as between the sea and a high rockbound coast.

The insalubrity of these low-lying districts is easily accounted for. The waters arrested in the doons by the encircling sandstone hills spread out in stagnant pools.

Lower down the bhaver, which consists of a gravelly soil, is very dry on the

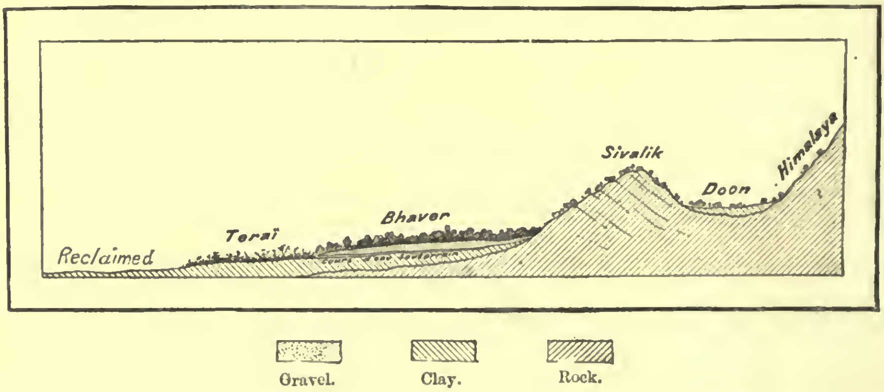
Fig. 17.—Forests of Sikkim—Birch Hill, North of Darjiling.

surface, thanks to the porous nature of the ground. But the gravel itself rests on

an impermeable argillaceous bed, and the vapours rising from the land after the rains remain confined beneath the dense foliage of the vegetation. Lastly, in the terai, the water after flowing beneath the gravels of the bhaver reappears on the surface, where it spreads out in marshes amid the thick growth of jungle. In this lower zone the Himalayan rivers, after traversing the bhaver tracts in deep and well-defined beds, also spread over the terai, strewing it with sands, gravels, trunks of trees, and débris of every sort. All these obstacles form here and there natural dykes, above which the running waters expand right and left into permanent or temporary morasses.

As in Europe, the only remedy for this state of things consists in regulating the discharge of the rivers, in clearing and cultivating the land. Settlers from the surrounding populations, who have less to fear from the *awal* or malaria than Europeans, have already begun here and there to bring under cultivation the more healthy open spaces in the terai and bhaver. The shepherds also come down with their families and flocks from the mountains in winter, in order to "eat the sun," and their camping-grounds are soon occupied by settled communities. Clearings ever increasing in number thus continue to extend the area of the relatively

Fig. 18.—Geological Section of the Terai and Bhaver Regions.



healthy tracts, which in many places, and especially south of Sikkim, interrupt the dangerous districts of the terai and bhaver. The route leading from the banks of the Ganges to Darjiling has in this way long lost its terrors. Yet there was a time when the peoples of the plains allowed the terai to encroach upon their cultivated lands, in order thus to place a wider interval between themselves and their eternal enemies, the marauding hill tribes.

The Panjab Hills.—Salt, Suleiman, and Hala Ranges.

In the north-west corner of India the whole upland region of the Panjab between the advanced spurs of the Himalayas and the Suleiman-dagh is occupied by slightly elevated plateaux and small ridges remarkable for the regularity of their disposition. In Panjal the last Himalayan range, which is skirted on the west by the Jhilam flowing from the vale of Kashmir, still follows the normal direction of

the whole system from south-east to north-west. The Hazara and Upper Panjab chains are, on the contrary, mostly disposed perpendicularly to the main axis, running almost everywhere in the direction from north-east to south-west. Here the Marri, which is the highest summit of the outer Jhilam region, still ranks with the great peaks of the Himalaya proper, for it attains an elevation of 7,500 feet above the sea. But south of this limit between two distinct regions, the plateaux have a gradually diminishing mean elevation of 1,500 to 1,000 feet, with crests rising but little above the average level. Not being sufficiently imposing to strike the popular imagination, these rocky hills have received no special geographical names, being merely designated from the tribes inhabiting them, from the towns and villages that have risen in the neighbourhood, the passes by which they are crossed, the forts commanding them, or some local peculiarity. The best known names are applied to whole districts, such as Potwar, which includes all the hilly plateau of Rawal-Pindi.

No other rocky eminences in the whole world have been more cut up by the elements than the crests of the Potwar and the other chains in the Cis- and Trans-Indus country. Several terminate in sharp needles so slender and jagged as in some places to look like so much delicate fretwork. All the softer parts of the rocks have been carried away by the rains, leaving nothing but the framework of the mountain, and the superficial deposits having thus been removed, the geologist is able at a glance to recognise the character of the primitive formations. But so regular are the outlines of some crests, that they might easily be taken for the work of man.

In this respect one of the most remarkable chains is the southern scarp of the rugged plateaux of the Panjab, to which the English have given the name of the Salt Range. It runs east and west between the Jhilam and Indus, whose bed it contracts at the Kalabagh gorge, beyond which point it is continued under the various names of Chichali, Shingarh, Kafir Kot, and Sheik-budin. It formed at one time the southern limit of the Asiatic mainland, and its escarpments, worn at their foot by the action of the surf, still present here and there the appearance of a rockbound coast. The Salt Range is one of the most remarkable in India, containing stratified rocks of almost every geological epoch. Here are represented both the Silurian, Carboniferous, Triassic, Jurassic, and Chalk formations, all underlying deposits of the tertiary period. Nummulitic limestones are especially abundant, while diorites crop out occasionally above the sedimentary strata. No less varied are the mineral treasures, including in diverse quantity gold, copper, lead, iron, besides sulphur, alum, saltpetre, petroleum, and coal. Hot springs bubble up in many places, gypsum abounds, while the whole range justly takes its name from the vast beds of salt which it contains. These beds, white, grey, or red, and varying alike in purity and colour, attain a thickness of 100 feet, and in some places the deposits of common salt are upwards of 400 feet thick. In one section of the Panjab chain Wynne has estimated the contents of several mines at no less than one million cubic feet, a store sufficient to supply the wants of all mankind for thousands of years.

The hills continuing the range west of the Indus are also largely composed of salt, and here may be seen isolated blocks 120 or 130 feet high, consisting entirely of saline crystals. By the infiltration of moisture, the action of the rains on the outer walls, and the pressure of the upper deposits, the underlying strata have been disturbed, presenting many faults and breaks often very perplexing to the geologist. Amongst the other curiosities of this interesting range are huge boulders of rolled granite, bearing evident traces of glacial action. An erratic block of red granite, whose original site in the Himalayas has not yet been discovered, was found by Theobald in the Salt Range, and is now deposited in the Calcutta Museum. The whole surface of the plateau stretching north of the range is strewn with sands and gravels, amongst which are scattered numerous erratic boulders, and similar rocks are found lining the banks of all the rivers, especially the Sohan and Indus as far as and even below Attock. During the recent geological epoch considerable changes have taken place in the hydrography of the country, which probably at one time formed the bed of a vast lake.

West of the Indus the various chains forming the geographical frontier of India are, like the Himalayas themselves, rather the escarpment or outer edge of a plateau than independent mountain systems, always, however, excepting the eastern extensions of the Safid-koh, running at right angles with the Indus between the ancient lacustrine basins of the Peshawar and Bannu. The chief range west of the Indus bears the name of the Suleiman-dagh ("Mountains of Solomon"), or Koh-i-Surkh ("Red Mountains"). It is rooted westwards in the uplands of the Waziri nation, and is pierced at intervals by gorges affording outlets to the intermittent mountain torrents rising on a parallel range, which might be called the Western Suleiman-dagh, or else the Jadram, from the Afghan tribes inhabiting its valleys. Of all the streams traversing the eastern Suleiman range, the Kuram alone reaches the Indus throughout the whole year, all the others running out in their shifting gravelly beds in the dry season.

Northwards the Suleiman-dagh is connected with the Safid-koh range, which is separated from the advanced spurs of the Hindu-Kush by the deep valley of the Kabul River. Towards the east some of its lateral offshoots form a junction with the western extremity of the Salt range, but south of the Kuram valley it develops an independent chain running regularly north and south. From the plains of the Indus it presents an imposing appearance, culminating with Mount Birgul, which rises to an elevation of 11,800 feet in the Waziri country. Of nearly equal height is the more famous Takht-i-Suleiman, or "Throne of Solomon" (11,298). But all the crests of this system are alike bare and arid, white in the noonday glare, almost translucent in the soft evening atmosphere.

Gradually decreasing in elevation towards the south, the Suleiman range, which has a total length of about 360 miles, disappears altogether towards the Indus, near the confluence with the "Five Rivers." After skirting the last spurs of the Suleiman-dagh, the main stream impinges on another border chain, which forms the eastern scarp of the plateau of Baluchistan, and which figures on most maps as the Hala range. But this is properly the name of a single pass, and the

whole system is more generally known to the natives as the Khirtar Mountains. It is composed of several parallel ridges consisting, like the Sind Hills, mostly of nummulitic limestones. The same formation prevails even amongst some of the rocky eminences east of the Indus rising above the alluvia of the stream, or encircled by the sands of the desert. Less elevated than the Suleiman-dagh, the Khirtar is only 7,000 feet high in its culminating point, while most of its peaks scarcely exceed 5,500 feet. The southern section is little more than a chain of hills some 2,000 feet high, gradually merging in the surrounding plains. Nevertheless the range is perceptibly maintained as far as Cape Monza, geographical and political limit of India, and is even continued seawards by the rocky island of Churna.

Like the Suleiman, the Khirtar is intersected by a river, which rises on the western plateau, and flows thence to the Indus. This is the Gaj, whose valley offers an easy access from the plains of India to the Baluchistan uplands. The border ranges were formerly supposed to present an almost insurmountable obstacle to the passage of caravans and armies, and but few available passes were known to exist between the plateau and lowlands. The Khaibar and Paiwar north of the Suleiman-dagh, the Gumul and Sanghar in the centre, and the Bolan in the south, were said to be alone practicable for military purposes. But the recent explorations of the English surveyors have shown that the frontier hills are, on the contrary, pierced by a large number of accessible passes. Markham enumerates upwards of fifty,* and others may be revealed by further research. It was not the difficulties of the road, but of the commissariat, that have at all times restricted to a few routes the communications between the two conterminous regions. Here the real defensive frontier is formed not so much by the hills themselves as by the gravelly and sandy wastes, the waterless and uncultivated tracts.

Hydrography of India.

The running waters are very irregularly distributed over India, their course depending largely on the atmospheric currents, the direction and abundance of the rainfall. The slope draining to the Bay of Bengal is on the whole better watered than the opposite side draining to the Arabian Sea. The northern extremity of the former basin receives in fact more than half of the whole discharge of the peninsula. Flowing for hundreds of miles in opposite directions, one to the west, the other eastwards, the Ganges and Brahmaputra collect all the rivers rising in the Himalayas for a space of over 1,200 miles, and discharge them into the Bay of Bengal through the hundred shifting channels which they have excavated between the Rajmahal and Garro Hills. The common delta thus formed presents the aspect of a region in which the two elements of earth and water are in eternal conflict. Low mud or sand banks, islands and strips of land, appear everywhere scarcely rising above the surface. The very trees plunge their roots into the liquid domain, while the alluvium gathering round their stems heralds the continuous encroachment of the mainland.

* Proceedings of the Geographical Society, January, 1879.

At the opposite corner of the peninsula the Indus, whence the whole land has been named, offers a certain symmetrical correspondence with the Ganges and Brahmaputra. It is fed by the snows of the Western Himalayas, mingled with those of the Hindu-Kush, Karakorum, Trans-Himalaya, and even of the Tibetan plateau. Its basin certainly exceeds 400,000 square miles in extent; but flowing in a far drier climate than that of Bengal and Assam, it sends down a much smaller volume than its eastern rivals. A large portion of its area of drainage even consists of sandy wastes. Nevertheless it is accessible to vessels of considerable size, and it thus completes, with the Ganges and the sea, the line of navigation which fully justifies the title of "peninsula" commonly applied to the whole of India. Although frequently spoken of as twin rivers, the Indus and Ganges present in

Fig. 19 – Reservoirs in Madura.

Scale 1 : 560,000.

12 Miles.

some respects a very decided contrast. Whilst the latter flows mainly west and east along the southern spurs of the Himalayas, the former runs chiefly north and south, at least as soon as it emerges on the plains. Like its great tributary, the Satlej, the Indus rises in the Tibetan regions on the inner slope of the Himalaya proper; lastly, it receives no affluents throughout its lower course, differing in all these respects from the Ganges. Hence the resemblances discovered by the Hindu poets, and after them by some modern geographers, between the two sacred streams, as if they were connected together by a sort of mystic relationship, must be rejected as for the most part purely fanciful.

Similar contrasts are presented by the rivers watering the opposite slopes of the southern plateau south of the Vindhyas. On the west side the twin streams Narbadah and Tapti, both rising near the geographical centre of India, flow in parallel

beds westwards to the Arabian Sea. Although discharging through separate mouths, they seem to belong to one and the same hydrographic system. But these are the only streams of any magnitude draining to the west coast, the Western Ghats running elsewhere too near the sea to allow any large basins to be developed. On the other side all the large rivers—Mahanaddi, Godaveri, Krishna, the two Panar, and the Kaveri—form large alluvial deltas along the Bay of Bengal.

Few other rivers alternate more regularly between the periods of low and high water. All their oscillations are controlled by the atmospheric currents, so that before appearing on the surface of the earth these streams may be said to have been formed in the aërial spaces, like so many meteorological phenomena. In no other region are the tillers of the land more careful to regulate the discharge, and thus render themselves independent of the alternating seasons. Crowded together as they are on the comparatively narrow arable tracts, this becomes for them a question of life or death. In Northern India the slight fall of the land has required the construction of an endless network of canals for irrigation purposes, whereas the uneven character of the surface on the Dekkan plateaux and slopes draining to the Coromandel coast has necessitated the formation of numerous reservoirs. The inhabitants have thus, as it were, restored the land to its original state, such as it existed before the streams had regulated their course, and while they still descended through falls and rapids from one lacustrine basin to another. Thus has industry in Southern India reproduced conditions which, at least in the relief, recall those of Scandinavia. Some of the 35,000 lakes restored by the peasantry of the Dekkan and Coromandel coast are hundreds of square miles in extent, and are larger than any of the natural basins of India proper outside the Himalayas. The so-called *anicuts*, or dykes, serve to retain the water in the reservoirs for the dry season, while the overflow escaping through the *calingalas*, or outlets, serves to feed the series of tanks at different levels, which farther down mark the course of the irrigation canals from their source to their end, and which have been compared to the ganglia of the nervous system. The anicuts, falling out of repair during periods of oppression, war, or distress, often give way during the rains at some weak point. Then the reservoir is suddenly emptied, and the water, mingled with stones, mud, and débris of every sort, rushes into a lower tank. Unable to resist the pressure, this reservoir in its turn bursts its barriers, and the liquid mass, thus swollen from stage to stage, carries widespread ruin down to the lowlands.

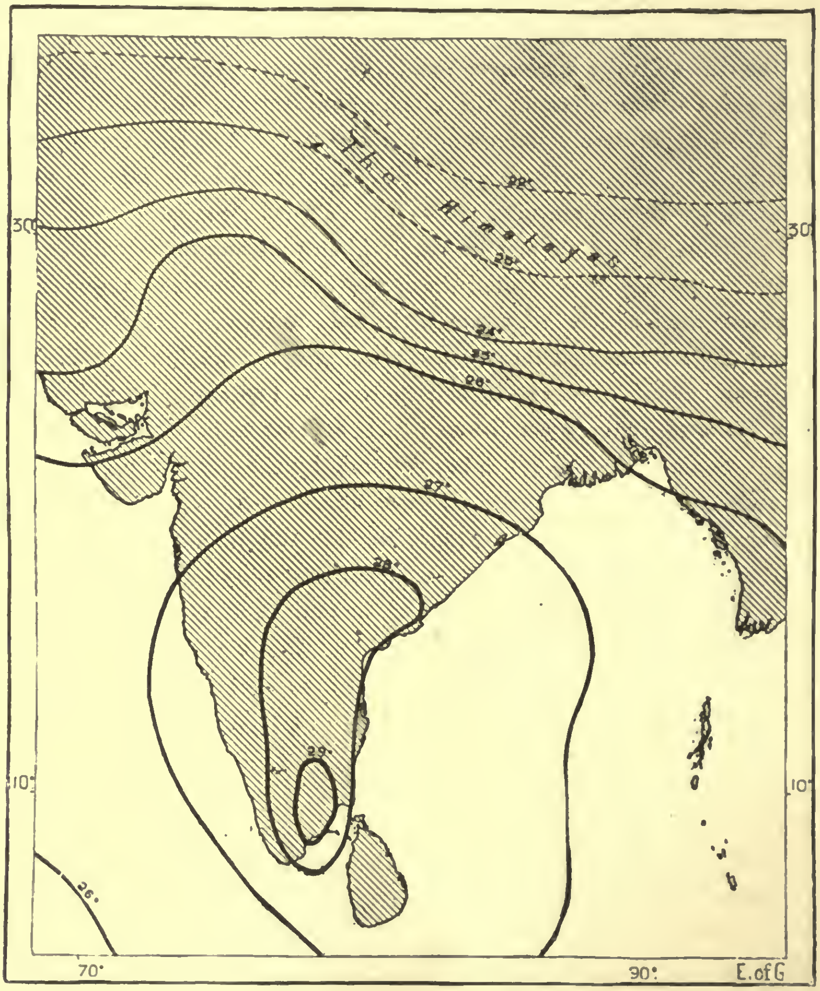
The Climate of India.

All degrees of temperature follow in succession from the shores of Ceylon, lying near the equator, to the Karakorum snowfields, which cover lofty mountains from 20,000 to 28,000 feet high, situated some 2,000 miles nearer to the pole. Thus while in some regions we seem to breathe the heated air of a furnace, others are rendered uninhabitable owing to the extreme cold and rarefied state of the atmosphere. Nevertheless, if the mountain barrier rising above the plains of the Indus and Ganges be regarded as belonging to a separate geographical area, the zones of

mean temperature will be found to succeed each other with tolerable uniformity from Ceylon and Cape Comorin to the first valleys of the Himalayas. Although less parched than certain regions of tropical Africa, the Cisgangetic peninsula is none the less on the whole one of the most sultry lands on the globe. The line of greatest mean heat passes immediately south of the peninsula, and even the isothermal of 24 degrees is deflected in the northern plains up to the very foot of the

Fig. 20.—Isothermals of India.

Scale 1 : 30,000,000.



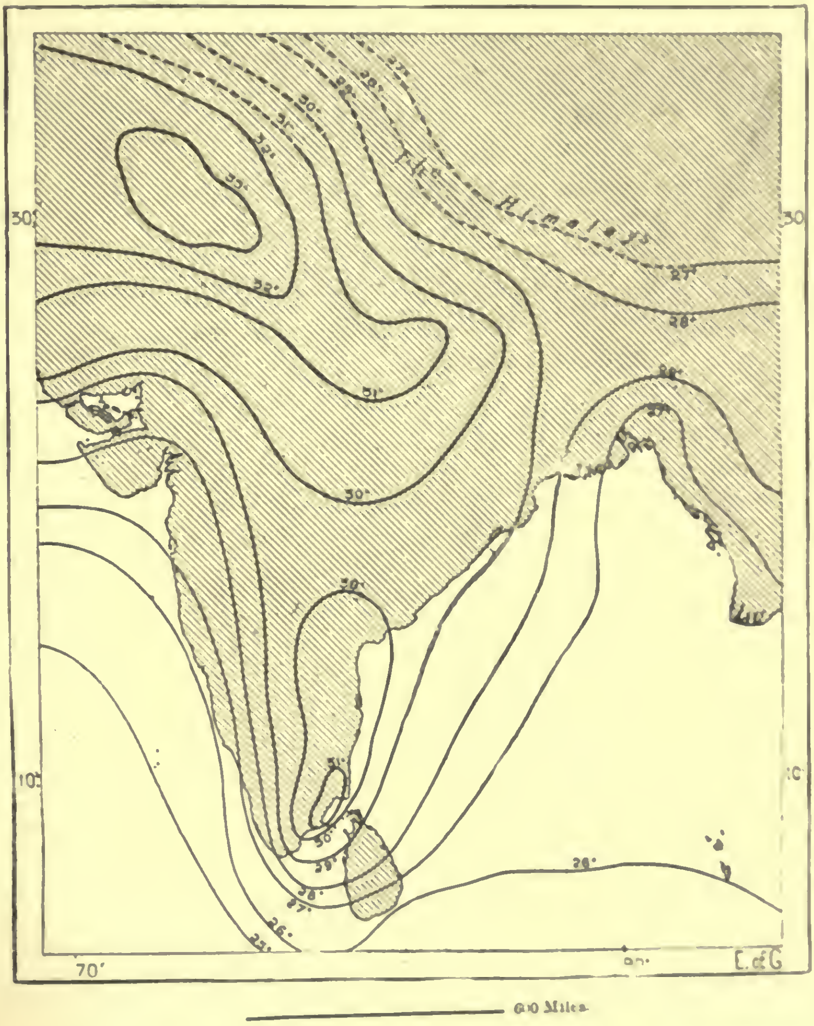
600 Miles.

advanced sub-Himalayan hills. Throughout the peninsula, for a distance of over 1,800 miles, the annual variation scarcely exceeds 8° F. if, discarding the differences of relief, all stations be uniformly reduced to sea level. But from season to season the inverse variations are more considerable, over 13° F. during the heats, and as much as 17° F. in the cold months. Yet even these are but slight differences, regard being had to the vast extent of the land. Upwards of 250 meteorological

stations established in every part of the peninsula enable us to study its climate, and trace its isothermals with more precision than is possible in many countries in West Europe.

Thanks to the neighbourhood of the equator and the moderating influence of the ocean and sea breezes, the temperature is naturally most uniform in the southern regions. Thus at Colombo, capital of Ceylon, the variation from month to month

Fig. 21.—Summer Isothermals of India.
Scale 1 : 30,000,000.



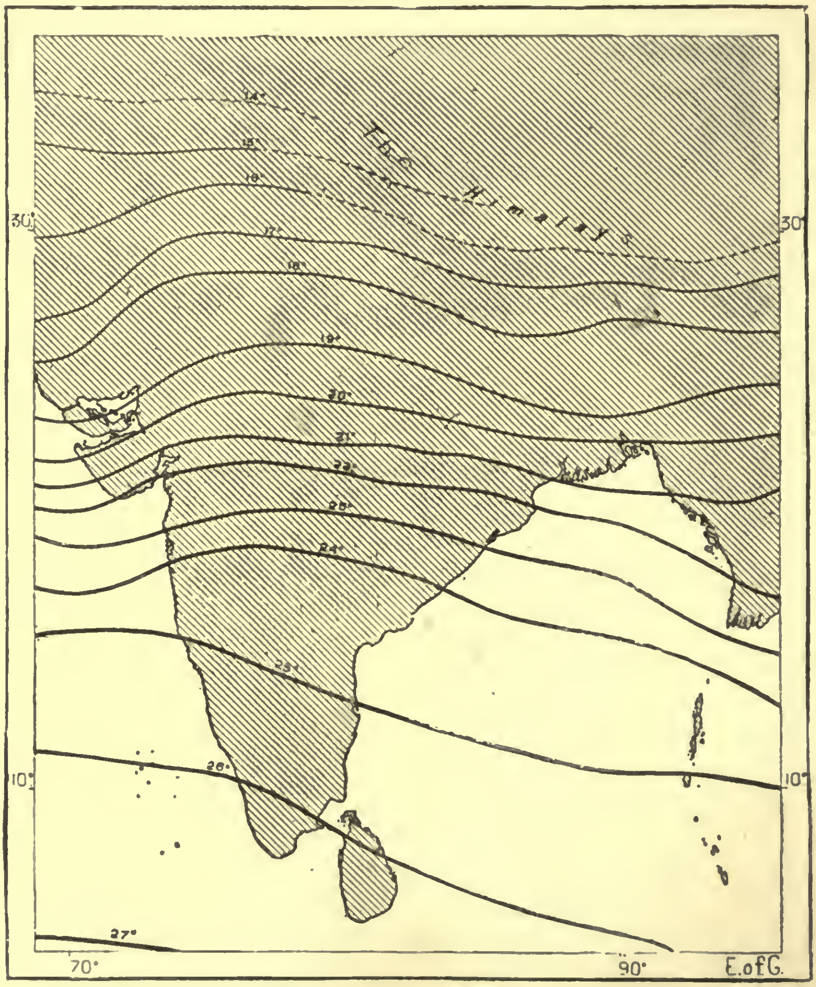
is about 3° F. only, oscillating between 79° and 82° F. On the Malabar coast between Mangalore and Cochin the discrepancy is less than 7° F., but as we advance inland it becomes much greater. During the hot season, and especially from March to May, the heat is far more intense on the Dekkan plateaux than on the coasts of Malabar and Coromandel. Yet the air is at the same time drier, so that the climate of the uplands is much less oppressive than on the coast, where the atmosphere is

like a furnace blast, especially when the sea breezes are succeeded by the "land wind."

The variation of temperature between the seasons naturally increases northwards in direct ratio with the latitude until we reach the Satpura range, which may be regarded as forming a secondary meteorological parting-line between Northern India and the Dekkan. Thus at Dera Ismail Khan, in the Panjab, which

Fig. 22.—Winter Isothermals of India.

Scale 1 : 20,000,000.



600 Miles.

lies far inland and nearly 600 miles north of the Tropic of Cancer, the deviation is about 47° F. between January and July, the coldest and hottest months, which are 48° F. and 95° F. respectively. Here the heat exceeds that of any other part of India in summer, when the equatorial thermal is deflected northwards so as to pass over the Panjab. It is then as sultry in this region as in the most torrid lands, not

excluding the Sahara itself.* The extremes of heat and cold observed at various periods reveal in the Panjab a total deviation of over 90° F., varying from freezing-point to exceptional heats of from 120° to 124° F. In Madras, where an equatorial and marine climate prevails, the long series of thermometrical observations, ranging from the first period of the English occupation, betrays discrepancies of no more than 45° F., oscillating between 63° and 108° F.

Subjoined is a table of the temperature of the chief Indian towns in the direction from north to south :—

Stations.	Mean.	July. (Hottest Month.)	January (Coldest Month.)
Peshawar	72° F.	92° F.	52° F.
Dera Ismail Khan	76°	91°	48°
Lahore	73°	92	52°
Amballa	73°	90°	54°
Delhi	73°	90°	54°
Agra	77°	94°	58°
Luknow	75°	90°	59°
Ajmir	79°	94°	61°
Patna	77°	97°	60°
Allahabad	81°	97°	63°
Benares	79°	95°	61°
Dakka	77°	85°	65°
Jabalpur	75°	90°	61°
Calcutta	77°	84°	65°
Baroda	79°	94°	68°
Nagpur	81°	95°	70°
Ahmadnagar	77°	86°	70°
Bombay	79° F.	85° F.	74° F
Vizagapatam	83°	93°	72°
Bellari	79°	86°	74°
Bangalore	74°	81°	68°
Arkot	81°	88°	72°
Mangalore	80°	86°	77°
Pondicherry	84°	86°	79°
Utakamund	56°	61°	50°
Calicut	81°	84°	77°
Karikal	83°	88°	76°
Koimbatore	75°	81°	72°
Trichinopoli	85°	90°	77°
Cochin	79°	85°	77°
Madras	81°	86°	76°
Kandi	72°	74°	70°
Colombo	79°	83°	77°

The Aryas, who had settled on the northern plains, had divided the year into six seasons. These were the "six youths" of the old myths, who cause the wheel of the year to revolve, thus keeping the circle of worlds and beings in an endless revolution. But this division of the year, which the influence of the sacred poems and songs of the Hindus popularised throughout India, and even on the bleak plateaux of Tibet, is far from corresponding with all the conditions, especially as the vicissitudes of the seasons in the south differ in many respects from those in the north. The *vasanta*, or spring, is the season of love and pleasure, as sung by the poets. The air is now serene, the sky limpid, while the southern zephyr murmurs softly in the foliage, wafting to the rural hamlet the intoxicating fragrance of the mango blossom. Field operations are now over, and the time has come for marriage, and feasts in honour of the gods. But this is presently followed by the *grishma*, or "season of sweats," with its dust-clouds rising above the roads and fields, its frequent fires amidst the dense jungle and crackling bamboos. These are the burning months of May and June, when the air is ominously still. But the fierce tornado is already preparing, the clouds are banking up, the thunderstorm bursts forth, heralding the monsoon, which begins with the *varsha*, or "rainy season." Now the fields are watered by swollen streams, nature is renewed, the seed sprouts in the tilled land. These two months of July and August are followed by the *sharad*, or autumn season of September and

* Hermann von Schlagintweit, "Travels in India and High Asia."

October, which ripens the fruits with its heats, still humid from the recent rains. Then comes the *himanta*, or winter, answering to the two last months of the European year, when the mornings and evenings are chill, but the days bright, allowing the husbandman to reap and harvest his crops. Lastly, the *sasi*, or *sisira*—that is, the period of fogs and night dews—ends with the month of February, after which the cycle of the seasons begins again.

The Monsoons.—Rainfall.

But the clearly-marked climatic divisions for the whole of India may really be reduced to the three seasons of heat, rain, and cold. The great annual crisis, the drama described in the old songs, and occupying a leading part in Hindu mythology, is ushered in with the rainy monsoon. As indicated by its Arabic name of *mausim*, the *monsoon* is pre-eminently "the season." Now the great heats accompanying the solar procession expand the atmosphere, causing it to rise in vertical columns to the higher regions; the whole land is converted into a fiery furnace; the aërial masses resting on the deep, and laden with moisture, are dissipated and borne landwards over the peninsula. On the coasts of Malabar, the Konkans, and Bombay, the current of the rainy monsoon comes from the south-west, and moves in the inverse direction to the north-easterly trade winds. It seems to be developed by the counter-currents descending from the upper regions to replace the rarefied air on the heated surface of the land. But it is also, probably, to some extent due to the trade winds of the southern hemisphere, attracted northwards by the heats, and gradually deflected north-eastwards by the diurnal rotation of the earth. The observations taken at the various meteorological stations, as well as on board ship, show that the southern monsoon is also partly caused by a local reflux of the air above the Indian Ocean, where it often happens that a zone of calm or irregular winds completely separates the south-eastern and southern monsoons from each other. The direction of the latter is not uniformly from the south-west quarter along all the Indian seaboard, for it frequently shifts round to the south, while in the Indus and Irrawaddi valleys, as well as on the Sanderband and Orissa coasts, it blows occasionally from the south-east.

But to whatever causes it may be due, the monsoon is one of the most majestic of terrestrial phenomena. The spectacle presented at its first approach may be easily contemplated from Matheran, near Bombay, from Mahabaleshvar, or any of the other headlands of the Western Ghats, which command at once a view of the sea, the coast, and the mountain gorges. The first storm-clouds, forerunners of the tempest, usually gather between the 6th and 18th of June, according to the year. On one side of the horizon the coppery vapours are piled up like towers, or, according to the local expression, are massed together "like elephants in battle;" and as they move slowly towards the land, one half of the firmament becomes densely overcast, while not a speck sullies the deep azure in the opposite direction. On the one hand, mountains and valleys are wrapped in darkness; on the other, the outline of the seaboard stands out with intense sharpness, the surface of sea and

rivers assumes the metallic hue of steel, the whole land, with its scattered towns, glitters with a weird glare. As the clouds strike the crags of the Western Ghats, the thunder begins to rumble, the whirlwind bursts over the land, the lightnings flash incessantly, the peals grow more frequent and prolonged, the rain is discharged in tremendous downpours. Then the black clouds are suddenly rent asunder, the light of day gradually returns, all nature is again bathed in the rays of the setting

Fig. 23.—Trade Routes between Madras and Bombay in the Eighteenth Century.

Scale 1 : 45,000,000.

sun, and of all the banked-up masses nothing remains except some fleecy vapour ascending the valleys or drifting over the tree-tops.

Such is usually the first outburst of the monsoon, after which follow the regular rains. But the watery mists will at times present themselves unescorted by the majesty of thunder and lightning, and then a midnight darkness unexpectedly overspreads the horizon, and the whole land is deluged by torrential rains. At times also the dense masses drift slowly along the mantling headlands for hours together, like fleets of war-ships sailing by a line of strongholds, each cloud in its

turn discharging its electric shocks as it doubles the capes. The heavens seem then to be at war with the frowning cliffs of the seaboard.

The regularity of the monsoons between June and September has certainly tended to control the arrival and departure of the inland tribes, while it has also for ages directed the movement of commerce along the shores of the peninsula. Before the introduction of steam navigation in the Indian waters, the fleets of trading vessels on the Malabar and Coromandel coasts were entirely guided by the return of the seasons. Long before the time of Nearchus, the Arabs, who brought the wealth of India to the ports of the Red Sea, were familiar with the course of the winds, regularly alternating from coast to coast. Nor could this remarkable phenomenon fail to strike the imagination of seafarers from the first beginnings of navigation, encouraging them to spread their sails to the favourable winds, teaching them to rely on the never-failing monsoon for the homeward voyage.

But the influence of the monsoon in the development of Asiatic commerce cannot be compared with its importance in irrigating the land, which, but for it, would be neither capable of cultivation nor even inhabitable. The north-east trade wind, descending from the Tibetan plateau, after crossing the deserts of Central Asia, brings no moisture at all. The few winter showers that fall on the northern plains of India during the prevalence of this wind are entirely due to local disturbances, and especially to the humidity brought from the Bay of Bengal by counter-currents blowing in the upper atmospheric spaces. To the summer rains is entirely due the existence of the Indian rivers, which water the forests and arable lands alike, and which have thus been the great civilising agent in the peninsula. Such is the incessant burden of the early songs of the Rishis, invoking Indra, who rends the clouds, to deliver the herds of heaven and pour down wealth and abundance on his worshippers. "Rain comes from the gods," repeats the Mahabharata; "rain gives us the plants on which depends the well-being of mortals."

The quantity of moisture brought by the summer monsoon varies from year to year, and differs greatly in the different regions of India. On the Western Ghats it is very considerable, amounting, on an average, to a rainfall of perhaps 200 inches. Driven by the wind against the escarpments and up the narrow valleys of the mountains forming the edge of the Dekkan plateau, the clouds precipitate tremendous torrents, which flow rapidly back to the sea, thus completing within a few days the circuit of waters developed between the ocean, the air, and the mainland.

But during their short course seawards the streams of the western slopes give rise to a dense vegetation along their banks, and renew the soil of the low riverain tracts by washing down the detritus of the crumbling lavas and laterites. To the action of these heavy rains and impetuous streams are due the deep gorges and precipices, the fantastic towers and peaks, occurring along the slopes of the Ghats. But beyond this mountain barrier the clouds of the monsoon, already relieved of most of their moisture, have little left except for the highest summits of the hills, which here and there break the general level of the plateaux on the Dekkan.

MAHABALESHVAR—VIEW TAKEN IN THE GHATS, OPPOSITE ELPHINSTONE POINT.

While the mean rainfall exceeds 270 inches on some points of the Malabar coast, it is less than 160 at Mercara on the rugged plateau of Kurg, and diminishes still more as we proceed eastwards. Even on the two slopes of the same mountain the difference is often considerable. Thus on Mount Chambra, lying west of the Nilghiris, the east slope receives nearly 40 inches less than the side facing the Indian Ocean.

The quantity of moisture also diminishes from Bombay southwards, a circumstance doubtless due to the gradual contraction of the peninsula towards Cape Comorin, whereby a continuously less extent of land surface is left for heating and rarefying the air. A better equilibrium is thus maintained in the south between the continental and marine atmospheric currents, and to this again is doubtless

Fig. 24.—Escarpments of the Ghats West of the Sources of the Krishna.
Scale 1 : 330,000.

6 Miles.

partly due the normal north-easterly direction of the monsoon. It is also remarkable that a rainfall, sufficient in more temperate regions to maintain a vigorous forest vegetation, will not suffice in Southern India to nourish large growths of timber. As in Russia and North America, where the contrast between woodlands and prairies depends on the greater or less supply of moisture, so in the basin of the Upper Kaveri dense forests alternate with bamboo thickets in proportion to the rainfall of the several districts.

In Northern India the humidity diminishes in the inverse order, that is, in the direction from east to west. Along the foot of the Suleiman-dagh and in the deserts stretching east of the Indus as far as Mount Abu, showers are both rare and irregular. Here the period of continuous rains is replaced by a dry season with intermittent storms. Even in the Panjab the anxious husbandman often looks in

vain for the much-needed rain-cloud, and the fervent appeals of the ancient Aryas to the storm-gods show that even then as now the supply was deficient. But farther east the monsoon, which is normally deflected towards the north-east, brings copious rains, whose arrival coincides with the melting of the snows on the Himalayas. Nevertheless the quantity of moisture derived from these combined sources is greatly exceeded by the discharge on the north-eastern highlands, where the summer monsoon is arrested. At Calcutta the mean rainfall is scarcely more than 80 inches, whereas it amounts to considerably over 600 on the Garro and Khasi Hills skirting the Brahmaputra valley. The heaviest rainfall hitherto registered in any part of the world occurs at the Cheraponji station, in one of the Khasi upland valleys, where the mean is about 620 inches, and where it reached 790 inches in the year 1861. Like the Western Ghats, the Assam Hills have been deeply scored by ravines and gorges, and few other rocky regions betray greater evidences of the erosive action of rains and running waters.

Droughts and Cyclones.

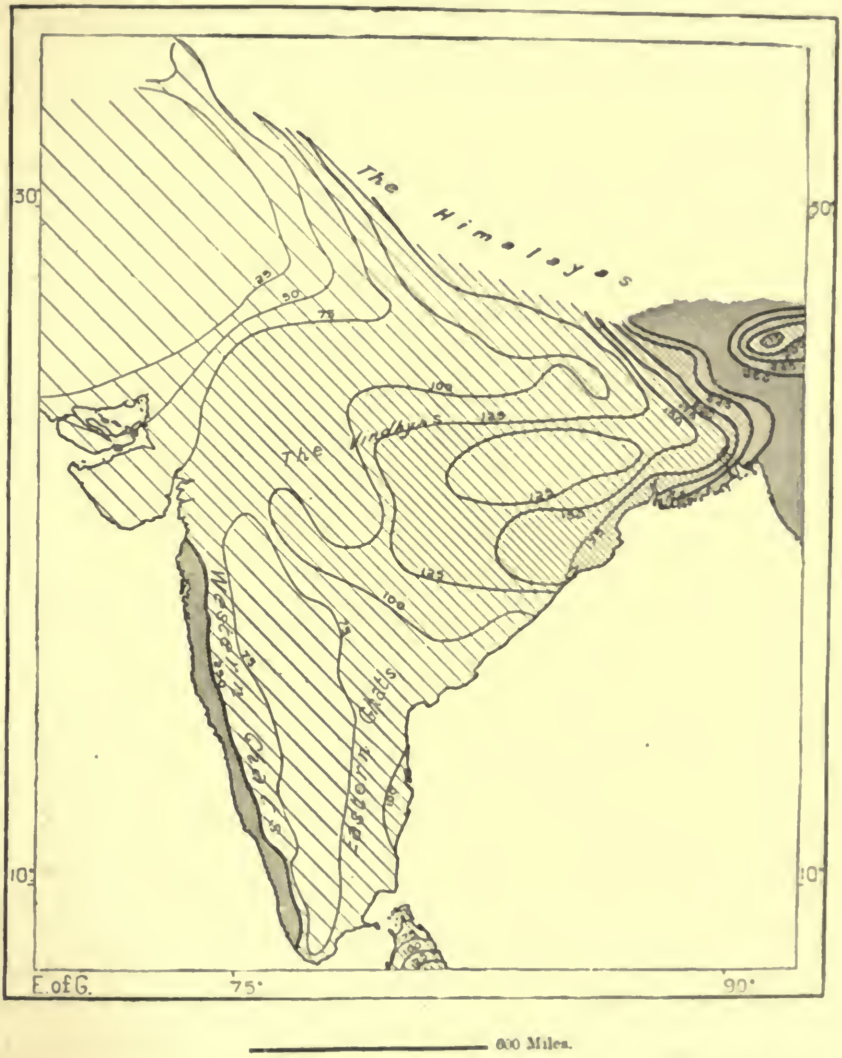
The least irregularity in the annual vicissitudes of the climate is often attended in India by the most serious consequences. When the rains fail, or are deficient in abundance, the rivers and irrigating canals dry up, famine becomes inevitable, and the lives of millions are imperilled. Long droughts are formidable especially in Sind and the Panjab, on the Gangetic plains, and on the east coast of the peninsula; that is, in all the regions where the mean annual rainfall varies from 40 to 60 inches. These lands would be periodically depopulated but for the irrigation canals, which supply the deficiency of atmospheric moisture. Meteorologists have sought to discover a constant relation between the recurrence of solar spots and the oscillations of the pluvial discharge. The cycles of the two orders of phenomena are supposed to correspond, each being about eleven years, so that the danger of drought might be partly averted by anticipating its occurrence. But the complete utilisation of the streams, which rise mostly in regions of abundant moisture, is the only sure means of securing the harvests and consequently the lives of the ryots in Sind and throughout the eastern regions of the peninsula.

Although less disastrous than the droughts, the cyclones nevertheless inspire more terror, because their destructive action is more sudden, while the scenes of desolation left in their track present a vivid picture of appalling ruin. And if famine destroys millions in a few months, the cyclones have at times swept away over a hundred thousand souls in a few hours. These tremendous meteoric disturbances are moreover inevitably followed by fatal epidemics and local famines. In the Indian seas north of the equator most of the cyclones are developed to the north of the Andaman Islands, between the Orissa and Arakan coasts. But they also sweep the waters along the Coromandel coast and in the Arabian Sea. They take place either at the beginning or more frequently at the end of the summer monsoon, and are usually preceded by calms, with a nearly uniform baro-

metrical pressure over a wide area. The heated vapours rising in these regions, being unable to expand to the right or left, are again condensed, the latent heat becomes liberated, and the cold air rushes in from all quarters to this focus of high temperature. Thus is produced the tornado from this conflict of the aërial masses. The most disastrous effects naturally take place on the low-lying coastlands, where

Fig. 25.—Pluvial Zones of India.

Scale 1 : 25,000,000.



a rise of a few yards above the mean high-water level suffices to waste the plains far into the interior.

The greatest recorded catastrophes of this sort have occurred about the mouths of the Kistna, Godaveri, Mahanaddi, Ganges, and Brahmaputra. The most terrific hurricane of which history has any knowledge, burst over the eastern Sanderbands on both sides of the Meghna in 1876. It is known as the "Baker-

ganj Cyclone," from the name of the district which it wasted. About midnight on October 31st three successive waves from 10 to 20 feet high approached the mouth of the river, and in a few hours three large islands, all the neighbouring islets, and 150,000 acres on the mainland were engulfed, together with upwards of 200,000 souls. None were saved except those who had time to take refuge in the trees. Nearly all the villages were levelled and all the animals perished. Then followed the cholera, caused by the putrefaction of the dead bodies, and still further decimating the survivors. The works necessary to protect the land from a recurrence of these disasters have scarcely yet begun along the low-lying shores of the Sanderbands.

Indian Flora.

With its diversified climate from the dripping hills of Assam to the waterless deserts of Sind, India naturally contains a rich and varied flora, without, however, constituting a special division of the vegetable kingdom. Far from being a centre of dispersion like South Africa, Malaysia, or Australia, it forms a sort of neutral territory where the floras of the conterminous regions are intermingled. With the exception of a few species that have here become differentiated, all the Indian plants belong to the domains either of Irania, the Mediterranean basin, Egypt, Malaysia, China, or Central Asia. These various elements may be disposed in four distinct regions, corresponding to as many climatic divisions—the Himalayan slopes, the almost rainless Indus basin, the superabundantly watered province of Assam, and the Indian peninsula proper without extremes of moisture or dryness.

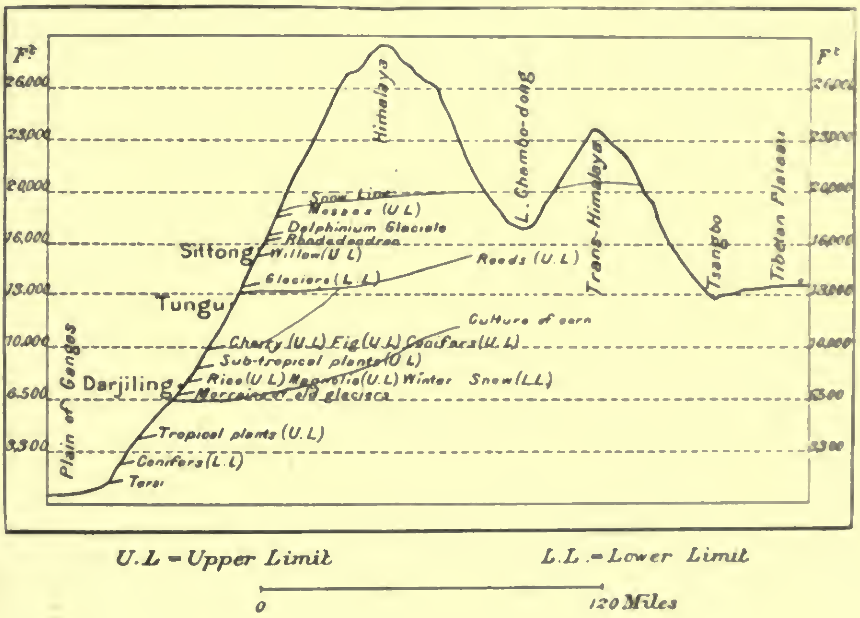
The Himalayan division, and especially the Kashmir highlands, offer the largest proportion of European species. In many valleys the traveller from the West might fancy himself still in his native land at sight of the surrounding vegetation. Included formerly in the same domain, and then gradually separated by changes of climate, the European and Himalayan plants have, in spite of the distance, preserved their original physiognomy and affinities. The pines, firs, junipers, yews, and other conifers forming the large forests to an altitude of 12,000 feet, bear a striking resemblance to their European congeners. The lovely deodora, "Tree of the Gods," which has been introduced from Kashmir into the parks and forests of the West, differs little from the cedar of Lebanon and the Atlantic seaboard, especially when it has attained its full growth. In the Eastern Himalayas the magnolia, aucuba, abelia, and other typical plants belong chiefly to the Chinese zone, and the tea shrub, which grows spontaneously in the forests of Assam, is merely a variety of the Chinese species.

Owing to its deficient moisture, the north-west region of India has naturally a poorer flora, and here the chief types are common also to Irania, Arabia, and Egypt. More than nine-tenths of the Sind species are indigenous in Africa, while the jungles skirting the desert consist almost exclusively of the same thorny scrub as that of Western Asia. The *populus Euphratica*, which lines the irrigation canals, is identical with the "willow of Babylon," and the *asclepias acida*, or *sarcostema*

viminalis, the pre-eminently Aryan plant, which yielded the "divine" *hom*, *homa*, or *soma*, is quite as much Iranian as Indian, and has been celebrated with as much enthusiasm by the sages of the Zend Avesta as by the Vedic rishis. But for them the intoxicating juice of the homa is no longer the sacred nectar, imparting life and immortality. It is no longer gathered by moonlight, mingled with clarified butter, and invoked as a deity; for in Persia the worship of the soma had already yielded to that of the vine, the juice of which was poured out in libations to new divinities.

The flora of the humid regions contrasts with that of Sind in its brilliancy and exuberance. Amid much specific variety, the upper Assam plain, the swampy tracts skirting the sub-Himalayas, the Khasi upland valleys, Lower Bengal, the

Fig. 26.—Vegetable Zones and Areas of Cultivation on the Sikkim Uplands.



Konkan and Malabar coasts, Ceylon and the other well-watered lands of the peninsula, all present a general resemblance in their vegetable forms, which rival those of Further India and the Sunda Islands in richness and variety. In the hotter parts flourish the pepper, cardamom, cinnamon, and gum-trees, besides cotton, indigo, sugar, and numerous medicinal plants, while the forests yield teak and sal, the most highly valued of timbers. The various palms, straight and firm, "like darts shooting heavenwards," which supply food, drink, clothing, furniture, and utensils of all kinds to the inhabitants, grow chiefly on the coast lands. In the interior, and especially along the tributaries of the Ganges, the mhowa (*bassa latifolia*) produces enormous quantities of sweet flowers, which serve as nourishment to men and animals, and which during many periods of distress have saved the lives of whole communities. Here also are found several varieties of the sacred banyan

(*ficus Indica*), whose branches bending down take root in the ground, thus forming fresh stocks about the parent trunk. Wherever the annual rains are insufficient for the development of forest trees, the bamboo grows in dense jungle, administering to all the wants of the people, who wonder that there can be any civilised beings in the benighted lands destitute of this useful plant.

The natural vegetable zones are being yearly encroached upon by the tillers of the soil, who have already succeeded in raising crops of cereals almost to the very limit of the snow line. In some of the sheltered parts of Ladak, barley is reaped at an altitude of over 14,000 feet, and villages are found at 13,000 and 13,500 feet whose inhabitants depend entirely on this produce. Nearly all the hamlets in the upper Satlej valley as far as 11,500, and in some places 13,000 feet, are surrounded by the willow and apricot, intermingled here and there with the *juniperus excelsa*, the sacred plant of the Buddhists. In the Himalayas the upper limit of natural and cultivated growths rises gradually from the outer slopes facing the plains to those overlooking the valleys in the heart of the highlands. Some species, which stop at 6,500 feet in the district south of Darjiling, reach altitudes of 7,000 and 8,000 feet in the pent-up and well-sheltered Sikkim valley.

Indian Fauna.

Like its flora, the fauna of India differs little from those of the neighbouring lands, being allied with the Tibetan, Chinese, and Indo-Chinese on the northern and eastern frontiers, elsewhere with the Iranian and Malaysian.

The southern slope of the Himalayas is naturally occupied by the same species as the Trans-Himalayan valleys and Tibetan plateaux, the southern limits here being such as are presented by the climatic conditions at the various elevations. Thus the wild and domestic yak, the antelope, gazelle, chamois, musk-deer, wild goat, sheep, ass, bear, white, black, and red wolf, jackal, fox, and wild dog of Tibet are all met either in the snowy regions or in the forests of the Himalayan slopes. But they scarcely encroach upon the dry zone, and as a rule the mountain species stop short where the woodlands begin, which are fed by the moist air of Sikkim. At the foot of the great range the forest region of the terai, and farther east the thickets of Assam and of the frontier highlands towards Burma are the chief refuge of the wild animals of India. Some of these, such as the dwarf pig (*porculia salviania*), weighing no more than 12 or 13 pounds, and scarcely 10 inches high, have elsewhere disappeared altogether from the peninsula.*

Even the elephant, driven from most other parts of India, is still able to hold his ground amid the swamps and jungle of Assam and the terai. Unlike the African elephant, the Indian species avoids the plains, everywhere preferring hilly districts and even rugged mountain uplands. He roams the Sikkim forests to an altitude of 4,000 feet, and a specimen was even captured at an elevation of over 10,000 feet. He would have probably already disappeared from all the Indian

* Several specimens of this animal were brought, in 1882, to the London Zoological Gardens, where they thrive well.

BRIDGE OVER A TRIBUTARY OF THE RANJIT—VIEW TAKEN IN SIKKIM.

forests, had not elephant hunting been regulated by the Government, which reserves to itself the absolute ownership of both varieties, the *makna* and *ganda*, the latter of which alone is armed with tusks. Several hundred are now annually captured and employed chiefly in road building and transporting timber and other heavy loads. Many are also kept by the native princes, who use them both for hunting and on state occasions.

The rhinoceros has also become rare, although four varieties with one or two horns still survive. He is found chiefly in the Jittatong forests east of the Meghna delta and in the muddy region of the Sanderbands. Formidable ruminants, such as the gayal, the gaur (*bos gaurus*), commonly called a "bison" by hunters, and the wild buffalo, still frequent the forests and jungle of Central India, Assam, and the Burmese frontier. The capture of these animals is attended with as much risk as that of the tiger and elephant. Of all wild beasts the buffalo alone, besides the carnivora, does not hesitate to attack human beings, and especially Europeans. Even in captivity it betrays an extraordinary hostility to the white man. But the wild boar, although he rarely faces the hunter, is even more detested than the tiger himself, in consequence of the depredations he commits on the cultivated lands. He is on this account regarded by the husbandman as the real enemy, and in many districts the tiger is looked on as a sort of tutelar deity, because he preys on the wild boar, the great ravager of the crops.

The "royal" tiger, so called on account of his strength and ferocity, has of all carnivorous animals best preserved his empire in every part of the peninsula, from the plains and hills up to a considerable altitude on the Himalayan slopes. He attacks especially the gazelle, antelope, ibex, wild boar, and all the smaller forest animals, and as long as this game abounds he seldom falls on cattle or other tame beasts. But when the jungle begins to become depopulated, or the tiger grows old and weak, being no longer able to hunt the deer and gazelle, he preys on the herds of the peasantry and even on the villagers themselves. As in prehistoric times, the struggle is thus still continued between man and wild beasts, and in many districts of India the latter might till recently have claimed the victory. A single tigress in the Chanda country, Central Provinces, destroyed one hundred and thirty-two persons during the years 1867 and 1868, and another "man-eater" is said to have annually devoured as many as eighty human beings. The people of the district came at last to look on him as a sort of deity, in whom was embodied all the strength and courage of his victims. The proximity of these marauders often causes the public roads to be completely forsaken, and one of them inspired such terror that thirteen villages were abandoned and a space of about 260 square miles left uncultivated.

The leopard, or "panther" as he is commonly called, is regarded by the hunter as even more formidable than the tiger himself. He is more daring, more cunning and nimble, qualities which more than compensate for less muscular strength. Once he has tasted human flesh, he becomes the scourge of the district, for he constantly requires fresh victims, whose blood he sucks, without always consuming the body. The *chita*, another species of leopard indigenous in the Dekkan, has become

the ally of man, having been trained to hunt the gazelle and other game, which he falls upon with amazing rapidity.

Several other feline species infest the Indian jungle, but the lion, largest of all and in the popular fancy regarded as even more powerful than the tiger, has almost ceased to exist on the mainland since the beginning of the present century. So recently as 1810 he was still hunted in the Panjab; but the Indian lion, which is destitute of mane, is now restricted to the rocky hills of the Gir district towards the southern extremity of the Kathiawar peninsula, where the natives give him the name of "camel-tiger." Near the same district the wild ass also has found a last retreat in the neighbourhood of the Rann of Katch, where it associates with the nilghau (*portax pictus*), although the latter still survives in some other places. The wolf holds his ground in all the open regions of the peninsula, and although less formidable, he often commits more ravages than the tiger. Hence he is worshipped as a god by some of the wild tribes, who forebode the greatest calamities when his blood is shed in their territory by the passing sportsman. The hyena is also dangerous to the cattle, and in time of famine even to the children of the peasantry. The jackals, which are very numerous, make the night discordant with their hideous howls, and from the cunning displayed in their marauding expeditions have acquired the same reputation in Hindu fable for wisdom and intrigue that the fox has in Europe. The *dhol* or wild dog is also numerous in the wooded districts, where it hunts in packs without barking. It will even attack tigers, and never fails to run down the quarry, even though the chase should last for days. Multitudes of flying foxes (*pteromys*) swarm in the forests, and numerous species of monkeys are met almost everywhere. Owing to the veneration with which they are regarded, they have in some places become the true masters of the land, freely entering the houses and helping themselves to whatever takes their fancy. To protect their provisions the villagers are obliged to cover them with thorny branches.

The statistical tables published in the various provinces contain lists of the large carnivora killed during the year, as well as the number of their human victims. Thanks to the prizes offered by Government and to the use of strychnine, the wild beasts are steadily diminishing; but it is found much more difficult to keep down the poisonous snakes, which are probably more destructive in India than in any other country. The annual official returns speak of thousands of deaths caused by these reptiles, whose victims Fayrer estimates at upwards of twenty thousand every year.*

Gunther reckons in the whole of India as many as seventy-nine species of venomous ophidians, over one half of which are aquatic. It is remarkable that all the species living in salt water (the sea and coast lagoons) are poisonous, whereas those frequenting the fresh-water streams and tanks are harmless. The bite, especially of the cobra, daboia, ophiophagus, and some other varieties is almost inevitably fatal, and of these the *naga tripudians*, or "copra di capello," so named by the

* Carnivora killed in Bengal between 1870–75, 18,196; *i.e.* 7,278 tigers, 5,668 leopards, 1,671 ounces, 1,388 wolves. Men killed during the same period, 13.416. of whom 4,218 by tigers and 4,287 by wolves. Men killed by snakes in 1877, 16,777. Snakes killed in the same year, 127,295. Human victims of snakes and wild beasts in 1880, 21,990.

Portuguese from the hood formed by the outstretched skin of its neck, is at once the most dangerous and one of the most numerous. According to Dr. Nicholson there are at least two hundred to the square mile in the Bangalore district. Owing to its susceptibility to music, this species is most in favour with the serpent charmers, and is also a sacred animal, being regarded as the emblem of the God of Destruction. Hence when the devout Hindu Brahman discovers one of these pests about the house, instead of disturbing, he brings it milk and pays it homage as to a domestic divinity. Even if it slays a member of the family he will merely remove it to the fields with many apologies, and should the sacred reptile happen to get killed by a less reverent hand, he will purchase and burn the body with many pious ceremonies. Thus is still perpetuated the serpent worship which in India preceded Brahmanism itself, and which is found under diverse forms in so many parts of the Old and New Worlds. Creeping out of the fissures of the rock, the *naga* seems to emerge from darkness as the representative of the underground world and of the inferior powers. It is the dragon of fable who vomits fire and smoke, the monster who carries off the wicked and plunges them into the burning lake, the sacred animal that wears a precious gem embedded in the folds of its head, the possessor of the mysteries concealed in the bowels of the earth. The great art of the sorcerer consists in extracting from him his secrets, which shall reveal the hidden mine, explain the virtues of the herbs and roots that heal from all disorders, or even point out the road that leads to wealth and power. The diadem of Siva is formed of seven intertwined snakes' heads darting forward, as if to threaten the votaries of the god. Vishnu also is worshipped, guarded by the thousand-headed serpent. In nearly all the Hindu temples is found this symbolic ornament, whose primitive sense has been gradually lost, and which has at last become a mere decorative motive. Even the umbrellas, objects formerly reserved for princes and nobles, have a form recalling that of Siva's snakes.

The Indian fauna also includes some formidable saurians—two species of the crocodile and the gavial of the Ganges. But these animals have tended to disappear, since manufacturers have begun to utilise their skin and fat, and since modern science has placed more efficient weapons in the hands of the hunter. In this incessant struggle of man with nature, he finds it easier to exterminate or domesticate the large animals, than to contend with the countless multitudes of small rodents and insects. While he destroys the lion and tiger, subdues the elephant, peoples the Himalayan forests with game imported from England, and stocks the Nilghiri reservoirs with fish from the north, he remains as powerless as were his forefathers against the clouds of locusts, the legions of rats, the ants and termites, and all the hosts of microscopic creatures which prey on his crops, destroying them in the fruit or the bloom. Against these foes he has to depend on the aid of other minute beings, or animalcula, which swarm or disappear with the vicissitudes of the climate. But in the vast kingdom of the feathered tribe he has, at least, sure allies, which help to get rid of all the refuse that might engender epidemics in the large towns. Amongst the species of vultures there are two—the *gyps Indicus* and the *gyps Bengalensis*, which well deserve the name of "scavengers," and which,

from their grave demeanour, are familiarly known as "philosophers" and "adjutants." In Calcutta especially, where these public benefactors are protected from attack by heavy fines, they may be seen in large numbers perched in melancholy rows along the walls of the streets and courts.

The Indian poultry is much the same as the European; the ubiquitous sparrow has followed the English to the settlements in the upland valleys of the Himalayas;

Fig. 27.—Vishnu guarded by a Snake.—Sculpture in the Jaina Temple of Sadri (Udaipur).

but songsters of all kinds are far rarer in the Indian than in the Western forests. The falcon is still trained for the chase, especially in Sind, and in Central India a very favourite bird is the maina, a species of starling, which becomes quite tame in captivity, and is taught to articulate a few words, such as the name of the god Krishna and others.

INHABITANTS OF INDIA.

Excluding a few tribes of unknown origin, who are said to be autochthonous, in ignorance of their true affinities, all the Indian races are connected with those of the conterminous regions. Like the animal and vegetable species, the inhabitants of the peninsula belong to wider areas of evolution than the narrow limits of the land where they are now found intermingled. The Aryas, while conscious of their common culture, recognise their mutual kinship of blood, speech, and thought on both sides of the "Indian Caucasus." Towards the west gradual transitions of race, idioms, and traditions connect the Mohammedan populations of Irania and India. On the northern and north-eastern border-lands the relationship is also recognised from community to community between the valleys of both slopes. Lastly, the Dravidians themselves, although now driven from the Indian plains to the southern plateau of the Dekkan, seem to have come originally from the north-west. Traces of their migration are supposed to be still found in Baluchistan, where the Brahui language is considered to be of Dravidian origin, while the ancient Medic has been by some allied to the same linguistic group. The trilingual inscriptions of Behistan, recording the history of Darius Hystaspes, has supplied plausible proofs of a fundamental connection of the Dravidian with the so-called "Scythian" family, now chiefly represented by the Finnish dialects.*

The great differences now prevailing between these various races must be attributed partly to the remoteness of the periods of dispersion from common centres, partly to the rapid changes of structure and glottology to which the languages, especially of barbarous and migratory tribes, are liable. Besides the proofs derived from history itself, the innumerable archæological remains abundantly attest the vast antiquity of man in the peninsula. Like Europe, India has her dolmens and menhirs, her stone implements, and depôts of manufactured flints. Here is found the whole series of transitional epochs, from the lowest palæolithic age upwards, and India has even yielded the very oldest traces hitherto anywhere discovered of the existence of man on the earth. East of Goa geologists have discovered, half buried under a superincumbent mass of basalt and laterite, a petrified forest of palms and conifers, some of the fossil trunks of which still bear evident marks of the axe by which they were felled. Thus the woodman was already at work in an epoch when the lavas were still overflowing from the craters of the Dekkan, craters which have been so long extinct that they can now be scarcely recognised. Hence these inhabitants of Western India must be referred to eocene times, possibly even to the close of the chalk period. There has thus been abundant time for the populations to become intermingled and diversely fused, casting and recasting over and over again the primitive types.

Nevertheless the persistence of races is far greater in India than on the

* The original text is far more positive on this point than is at all warranted by the conclusions of modern comparative philology. Much searching study is still required conclusively to establish the organic relationship of the Dravidian with the Brahui, not to speak of the Medic and Finnic linguistic families.—EDITOR.

European continent, a circumstance partly due to the relatively uniform contours of the Gangetic peninsula, compared with the aggregate of islands and peninsulas constituting the north-western region of the Old World. In any case agricultural populations must under otherwise like conditions remain all the less sedentary in proportion to the greater facilities afforded for shifting their settlements, and according as the surroundings themselves are more changing and varied. In many respects the Hindus represent an almost changeless element compared with Europeans. Throughout the period of some three and twenty centuries, during which the barbarous tribes of the West have risen to the very highest stage of civilisation hitherto reached, the inhabitants of the peninsula might almost seem to have remained stationary. The broad descriptions left by early writers are still largely applicable to the natives. Even the institution of caste, partly abolished by Buddhism, has been revived. Thanks to this remarkable stability, the types of the various tribes and races grouped together in the peninsula have been far better preserved than those of the more restless Western peoples.

Hence each special region contains still distinct barbarous or civilised populations, which must be studied apart. Here attention will be paid, as far as possible, to the different ethnical groups, while describing the land according to its natural divisions, which have here and there been rudely modified by conquests and administrative changes.

CHAPTER III.

WESTERN HIMALAYAS.

UPPER VALLEYS OF THE "FIVE RIVERS."

KASHMIR, EAST DARDISTAN, HAZARA, CHAMBA, KANGRA, STATES OF THE UPPER SATLEJ.

THIS highland region constitutes collectively a sort of neutral zone, belonging geographically neither to Tibet, India, nor Turkestan. The prominent ridges form a continuation of the Tibetan ranges, while the intervening valleys prolong the depressions of the plateau. Although the drainage is towards the plains of Sind and the Arabian Sea, the deep river gorges, the scarps and passes leading to the upper basins, completely separate the two regions of the highlands and lowlands, just as the former is separated from the domain of eternal snows. In the language of the old Hindu poets, "three worlds" are found here superimposed one above the other.

Nearly all the inhabitants of Kashmir and of the conterminous valleys present analogous contrasts with those of the open plains of the Panjab. It was at the foot of the mountains that in this direction the land of the Aryans was limited in the first historic times, and Kashmir has since then often followed political vicissitudes independent of those of the "Five Rivers." Even so recently as 1819 it was under the sway of the Afghans, nor was the English supremacy acknowledged by the Maharaja of Srinagar till the year 1846. In other respects the political limits of his states coincide accurately enough with the natural frontiers. Kashmir is separated from Chinese Turkestan northwards by the Karakorum range, with its difficult snowy passes, while towards the south its frontier is sufficiently indicated by the last parallel spurs of the Himalayas. Here, however, a strip of territory from 3 to 18 miles broad, known by the Persian name of Daman-i-Koh, or "Skirt of the Mountains," encroaches on the plains. Each of the natural divisions of the land has received similar general designations. Thus, the advanced sub-Himalayan chain in Chamba and Spiti, as well as in Kashmir, is called the Kanti, or "Edge." Beyond this line, all the hilly tracts of the interior are collectively known as Pahar, or the "Highlands."

Lingtzhitang and Kuen-lun Plateaux.

By far the largest part of this vast upper basin of the Five Rivers consists of uninhabited spaces.* Such must naturally be the case in a region formed by an inclined plain, whose upper edge stands at an altitude of 20,000 feet above the sea. The mean elevation of the whole land must be estimated at over 13,000 feet, an elevation exceeded by very few Alpine peaks in Europe. The whole north-eastern division consists of a vast plateau about 16,000 feet high, which may even be regarded as belonging geographically to Tibet, for the ranges here rise to comparatively slight elevations above the surrounding uplands, which present wide stretches of perfectly level plains. Here Schlagintweit, Hayward, Shaw, Drew, and other explorers have found open spaces which have not even the necessary incline to discharge the drainage from the melting snows either southwards to the Shayok or northwards to the Kara-Kash basin. These tracts, known as the Lingtzhitang (Changchenmo) and Kuen-lun Plains, occupy altogether an area of at least 7,000 square miles.

These intermediate plateaux between the Karokorum and Kuen-lun form the western continuation of the Tibetan province of Kachi. The moderately elevated fossiliferous Lokzhung ridge, which divides them into two distinct plains, runs first east and west, and then trends north-westwards. The few travellers that have traversed this region describe it much in the same way that Nain-Singh, Huc, and Prjevalski speak of the East Tibetan plateaux. In midsummer, the only season during which this "land of death" has hitherto been visited, the snows have everywhere disappeared except in certain places where they form snowfields or even crystalline masses looking at a distance like saline wastes. The white or greyish land stretches everywhere beyond the horizon, without presenting any visible obstacle to the wayfarer. But the rarefied air, the intense heat during the day, the violence of the regular afternoon gales, the sudden night chills due to radiation, all combine to render the least effort extremely painful. The mirages constantly rising in the quivering atmosphere, and mocking the eye with phantom lakes, also tend greatly to increase the traveller's fatigue. The ponies, yaks, or pack sheep of the caravan have their own fodder to carry as well as the camp fittings, for these bleak plateaux are almost entirely destitute of vegetation. Nothing is found beyond a few patches of herbage here and there, which, nevertheless, suffice for the sustenance of some wild asses, antelopes, and yaks still frequenting these dreary uplands.

There can be no doubt that the Lingtzhitang and Kuen-lun plateaux were

* Areas and populations of the Western Himalayas :—

	Area in Square Miles.	Population in 1872.
Kashmir	71,000	1,535,000
Independent Dardistan	14,000	400,000 (?)
Hazara	3,000	367,200
Chamba	3,500	130,000
Kangra	9,300	743,900
Upper Satlej States	8,350	729,700
	109,150	3,905,700 (?)

formerly under water. The soil is evidently alluvial, regularly stratified, and still revealing slight traces of the vegetable remains which were deposited with the mud on the bottom. The erosions formed on the edges of the plateaux, and here and there in the interior of the basins, enable us to understand how the lakes became gradually filled in. They must have at one time formed a common basin,

Fig. 28.—Lingtzhitang and Kuen-lun Plateaux.

Scale 1 : 1,500,000.

30 Miles.

for water-marks are visible up to the depression in the Lokzhung ridge running between the two plains. Then the water fell below this level, and the two lakes thus formed gradually dried up. A few pools still remain, some permanent, others intermittent, surrounded by saline efflorescences and depositing a sandy clay, which becomes "hard as a biscuit" in the wind and sun. Drew supposes that the lakes drained northwards to the Kara-kash River, and southwards to the Chang-chenmo.

Rupshu Lacustrine Region.

The Rupshu district, forming the south-east corner of Kashmir on the Tibetan frontier, bears some resemblance to the north-eastern plateaux. But it is less elevated, falling to a mean altitude of 15,000 feet, and is intersected by more numerous ridges, some running parallel, others at right angles or obliquely to the axis of the Himalayas. Nevertheless Rupshu may still be regarded as a plateau, supporting ranges of diverse height and fissured at the edge by the valleys of the Upper Indus, Zanskar, and several tributaries of the Satlej. Like the Lingtzhitang and Kuen-lun plains, Rupshu was formerly to a great extent covered with lakes, some remains of which have become saline or at least brackish. Such are

Fig. 29.—Ancient Lakes on the Rupshu Plateau.
Scale 1 : 1,200,000.

30 Miles.

the two so-called "Sweet Water" and "Salt" Lakes, which occupy a depression in the north-west, and the vast Tso Moriri in the south. At over 300 feet above the present level of the Salt Lake old water-marks are visible, showing that at one time it drained through the Zanskar to the Indus. The Tso Moriri also, formerly at least 50 feet higher than at present, discharged through the Para River to the Satlej. Other cavities on the plateau are also occupied by lakes or marshes, the remains of larger basins. Thus everywhere between the Kuen-lun and the Himalayas we find the effects of a climate which has been constantly becoming drier during the present epoch. Everywhere the waters have subsided, and saline substances—magnesia, carbonate of sodium, common salt—have everywhere been deposited on their beds. Sulphur and borax mines are also worked by the Kashmir

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Government. When Cunningham visited Hanle in 1847 a considerable freshwater lake still occupied a portion of the plain: in 1864, that is, seventeen years afterwards, this basin had entirely disappeared.

Glaciers of Kashmir.

With the exception of the Upper Shayok Valley, the whole northern region of the Indus basin is occupied by almost inaccessible glaciers. For a space of 180 miles the Karakorum or Mustagh, here running south-east and north-west, seems to be everywhere blocked by ice-fields, which stretch for some twenty-five or thirty miles south of the main range. Even before the surveys, the chief peaks of this range had long been known to the natives. Such are the three-crested Masherbrum, the Gusherbrum, and the two-crested peak Dapsang, which had long been indicated on the maps as K^2, and which, having an elevation of 28,278 feet, ranks next to Mount Everest as the highest on the globe. The difficult pass leading over the range west of this peak is practicable only for a short time during the summer. No European has yet crossed it, and it seems not to have been used even by the natives since the year 1863.

The southern glaciers of the Karakorum, covering about one half of the old kingdom of Baltistan, are the largest not only in Asia but in the whole world beyond the polar regions. It is remarkable that the Leh range, rising in isolated majesty between the deep depressions of the Shayok and Indus, contains very few, and those of small size, while the Karakorum on the one hand and the Zanskar chain on the other send down such vast frozen rivers to the lower valleys. Although its peaks have a mean height of over 16,000 feet, and in some places even 20,000 feet, the Leh range is still rather less elevated than the Zanskar. Hence the moist winds from the sea and the plains mostly pass over it, reserving nearly all their remaining humidity for the still higher Karakorum farther inland. Hence also a great contrast in the vegetation of these neighbouring mountains. Most of the Leh valleys are stony and arid, the few patches of herbage and brushwood being all the more conspicuous amid the surrounding rocks and sands. But in the Karakorum valleys the rich grassy slopes, decked in spring with a great variety of flowers, reach to the very foot of the moraines, and even higher along the side glens. The cypress, birch, and willow flourish in close proximity to the glaciers, and, as in the Swiss Alps, the cultivated lands are seen overlooked here and there by seracs.

In Upper Baltistan the lower ice limit is estimated at about 10,000 feet. The Biafo glacier near the village of Askoli descends rather lower, and the upper limit of trees exceeds it by at least 1,600 feet. Thanks to the great length of these glaciers, their mean slope is so slight that several lakes are confined between the ice and the neighbouring cliffs. But, as in the Swiss Lake Moerill on the edge of the Aletsch glacier, all the water sometimes suddenly escapes, when the melting of the ice farther down opens deep crevasses to the pressure. The Karakorum crystalline masses also present the same phenomena of progress and retreat as those of Europe.

The moraines of the Arandu glacier are gradually encroaching on the pastures, turning up the grassy surface like the shear of an enormous plough. Those of the Palma Valley have also entered a period of expansion, while the moraines in the Tapsa Valley have already been abandoned by the glaciers, which are now retreating in that direction. But whatever be their present vicissitudes, there can be no doubt that all of them formerly descended much farther down their valleys, as is evident from the numerous traces of glacial action observed by all travellers far below their present limits. Copious hot springs abound in the Upper Baltistan valleys close to the glaciers, and even in the heart of the snowfields.

Gilgit and Zanskar Highlands.

The western section of the Mustagh, where it merges in the Hindu-kush and Kuen-lun, is one of the least known regions of Asia. Being occupied by tribes hostile to their more civilised neighbours lower down, the country has remained unexplored, and the published maps are based on more or less vague native reports, and on the distant views of the hills obtained by the English surveyors. But this region also certainly abounds in glaciers, especially about the sources of the Hunza and Nagar Rivers, whence two petty states take their name. These two streams, which flow through the Gilgit to the Indus, skirt the north side of West Baltistan, thus separating it from the mountains that form the border range of the Great Pamir. But the Gilgit flows in a valley which forms a direct north-western continuation of the depression traversed by the Indus. For a distance of about 660 miles in a straight line between the Kailas and Hindu-Kush, the Indus and Gilgit thus jointly reveal the presence of a probable line of fracture parallel to the Karakorum and Himalayan ranges. Below the confluence the Indus, abruptly changing its course, passes in a series of gorges through the highland region commanded by the Nanga Parbat, or Diyarmir Peak.

In Kashmir proper the most prominent range is the Zanskar, or Bara-lacha (Bara-latsé), which may on the whole be regarded as a continuation of the Trans-Himalaya, whose western limit is the Raldang Kailas, famous in Hindu mythology. But at the foot of this mountain lie the deep gorges of the Satlej and its affluent the Para, through which the one descends from the Tibetan plateau, the other from the Rupshu uplands. At the point where the Satlej is joined by the Spiti, so profound is the abyss, that the confluence of the two rivers can scarcely be perceived from the neighbouring bluffs. From the path winding along the upper terraces little is visible, except a yawning chasm between vertical or slightly inclined rocky walls. Through these schistose masses the united stream has gradually excavated its bed to a depth of no less than 1,150 feet.

Immediately west of the Satlej gorges, the range running to the north-west rises to elevations of over 20,000 feet in its highest summits, and from every fissure sends down snows and ice. But the Zanskar Highlands are not seen in all their savage majesty till we reach the Bara-lacha Pass, near the sources of the

SPITI.—VIEW OF DANKAR.

Chandra and Bagha, the two head-streams of the Chinab. Being composed of gneiss, porphyries, schists, and quartzose conglomerates, they are elsewhere unrivalled for their brilliant tints, bold outlines, and endless variety of fanciful forms. Domes, towers, needles, sharp peaks and pyramids, follow in seeming disorder all along the line, and every stage has its special shade of green, purple, yellow, or other colour glittering in the sun, or breaking the monotony of the sombre hues. But few travellers venture to face the fatigue and perils of long journeys to admire the sublime scenery of these bleak uplands. Arable tracts and pastures, at a mean elevation of 13,000 feet, are here watered by the two head-streams of the Zanskar; the houses with their brushwood roofs are scarcely to be distinguished from the surrounding slopes; and not more than three thousand persons altogether are found scattered over a space some 120 miles long. Lying far from the natural trade routes, the Zanskar district could scarcely support a larger population, unless the rich copper deposits, which give their name to the country, attract the serious attention of the Kashmir Government.

The district of Spiti, or rather Piti, as it is pronounced by the natives, is scarcely less elevated than Zanskar, from which it is separated by the main range. Here the hamlets stand at an average altitude of 13,000 feet, and so destitute is the land of trees, that the solitary apricot-tree of the valley was shown to Wilson as quite a wonderful sight. A somewhat more hospitable land is the neighbouring district of Darsha, or Lahul, where all the villages are surrounded by trees and cultivated plots, although still at elevations of 9,000 or 10,000 feet.

The Zanskar range is dominated eastwards by the twin mountains Nun and Kun (Mer and Ser), whence numerous glaciers descend southwards to the Wardwan Valley, northwards to those of the Suru and Dras. But the range falls continually north-westwards, and is here crossed by numerous passes leading from the vale of Kashmir to the Upper Indus Valley. The Zoji-bal, one of these passes dedicated to Siva, is only 11,400 feet high, and is consequently the lowest in the whole Trans-Himalayan system, apart from the deep gorges excavated by the Upper Satlej and other mountain torrents. The neighbouring Mechihoi glacier descends to 11,000 feet above the sea, which is far below the upper limit of cultivation. These highlands probably receive a greater abundance of snow than any other Himalayan district. Here it snowed almost incessantly from October, 1877, to May, 1878, and on the Zoji Pass the snow was in the month of August still 150 feet thick in many places.

Deosai Plateau.—Nanga Parbat.

The main ridge, which has a mean elevation of 15,000 or 16,000 feet, is continued to the north of the Kinshan-ganga, or Krishna-ganga (Krishna River), a large affluent of the Jhilam, and here ramifies into a number of branches, one of which skirts the broad plateau of Deosai. This plateau forms a basin 12,000 to 13,000 feet above the sea, full of pebbles and gravels formerly deposited by the glacial torrents from the surrounding hills, nearly all of which fall at present

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below the limit of perpetual snow. The cavities of the Deosai are filled with a few scattered lakes, and from the south-east corner of the tableland the Shigar River washes down a little gold dust to the Suru, a tributary of the Indus. This "Plateau of the Devil," as its name means, is easily crossed in summer, but the snow-storms render it very dangerous in winter. There are no human dwellings, no plants beyond some short herbage in the hollows, and few animals except the marmot, which resembles the "tarbagan" of Central Asia and Siberia in its watchful ways and troglodyte habits.

The Deosai is separated by the deep gorges of the Astor, or Hazora, and its affluents from the Nanga Parbat, which stands on the extreme verge of British India. This giant of the Western Himalayas seems all the more imposing that the whole western section of the Trans-Himalaya beyond the Nun and Kun falls below the snow-line. The "Naked Mountain," as its Hindu name is interpreted, towers some 7,000 feet above the surrounding crests, and on the east and south its walls, which are too steep to retain the snow, except in a few crevasses, rise at one spring above the glaciers. From nearly all the summits of Kashmir the Nanga Parbat, known also as the Diyarmir, stands out boldly against the horizon, and is also visible from the plains above all the intermediate eminences. From Ramnagar in the Panjab, a distance in a straight line of 200 miles, Cunningham was able to distinguish it in clear weather. One of its northern glaciers descends near the village of Tarshing in the Astor Valley down to 9,500 feet above sea level, probably the lowest limit reached by any of the glacial streams throughout the Himalayan regions. The Tarshing glacier, which is fed on both sides by others of smaller size, impinges at its lower end on the base of the mountain, against which its whole weight is compressed. In 1850, when it was much more elevated than at present, it dammed up a lake considerably over a mile long and 300 feet deep at one point. To guard against the threatened danger, the natives had placed sentinels near the spot, and as soon as the barrier began to yield, all escaped to the neighbouring heights. But their dwellings were swept away, their fields wasted, and the very topography of the Astor Valley became modified. Since then another lake has been forming under similar conditions, and must be followed sooner or later by similar results. Whenever disasters of this sort become imminent, the inhabitants of the upper valleys send warnings to those lower down written on bark leaves.

The Nanga Parbat was also the scene of the tremendous landslip which completely blocked the course of the Indus in 1841. Godwin-Austen, Shaw, and others fancied that the stoppage had been caused by an obstruction formed by the Shayok glacier. But this obstacle could not have prevented the Indus Proper, the Gilgit, and so many other tributaries from flooding the bed lower down, where nothing now flowed except a shallow stream fordable all along its course. Hence it became evident, as pointed out by Montgomerie and Becher, that the phenomenon could only have arisen from a barrier formed below all the upper affluents, that is, south of Gilgit, and it was accordingly at Hator Pir, near the village of Gor, that the remains of the enormous chaotic accumulation were afterwards discovered by Drew. When the huge mass of water, shingle, and mud, estimated by Cunningham at

20,000,000,000 tons, rushed down from the upper gorges, a small army of Sikhs was encamped on the banks of the Indus, near Attok. Over five hundred men were swept away by the flood, which rose 30 feet; villages perched on the high bluffs were razed to the ground; the current of the Kabul River was driven back over 20 miles from its mouth, and a layer of mud more than a foot thick was strewn over the plain.

Panjab and Kajnag Uplands.

The Chamba and South Kashmir Hills, between the Satlej and Indus Valleys, and separated from the higher inland ranges by the Chinab and Jhilam Valleys

Fig. 30.—Temporary Lake, Upper Indus Valley.

Scale 1 : 2,300,000

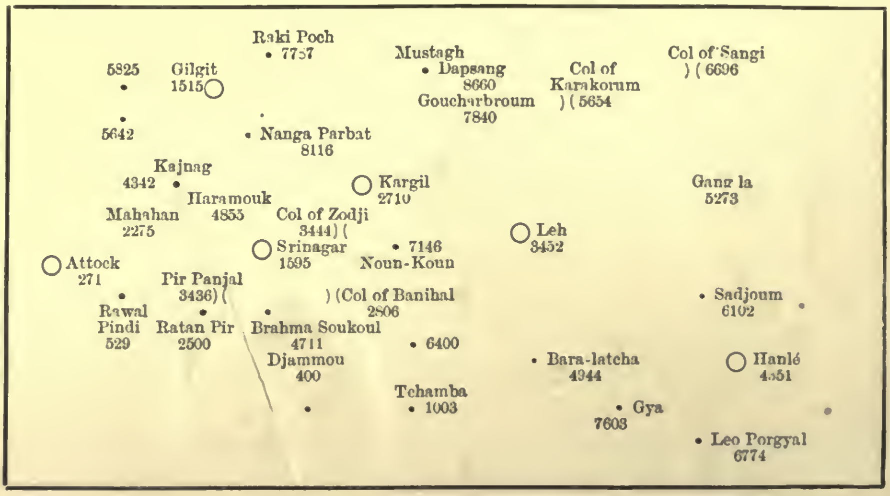
60 Miles.

are mere secondary spurs compared with the Nanga Parbat and Zanskar Mountains. The advanced eminences forming the natural limits of the country above the Panjab plains are little more than ordinary hills, 1,100 or 1,200 feet high, and running in continuation of the Sivalik chain. Rugged and rocky, fissured by the torrents, in parts destitute of vegetation, with no trees beyond a few acacias mingled with prickly undergrowths, they are difficult to cross except where modern roads have

been constructed, and travellers still echo the complaints of Bernier when he followed in the cortège of the Emperor Aureng-zeb. Their outer scarps present a series of abrupt terraces towards the doons, while the northern slopes are comparatively gentle and regular. Their vegetation already belongs to the temperate zone, and in winter all the summits are snowclad. Here the land often assumes a European aspect, and the forests, especially on the north side, recall those of the West. These hills, which form the western extension of the Himalaya proper, and which are cut up into unequal sections by the Satlej, Ravi, Chinab, and Jhilam, are crowned by peaks with a mean altitude of from 10,000 to 15,000 feet, and are consequently about the same height as the European Alps. To this system belongs the Panjal ridge, by which the lacustrine basin of Kashmir is limited southwards, and which is crossed by numerous passes, here usually called *pir*, from the "holy" recluses who established themselves at these points, to bless the wayfarers in return for their offerings, and for the remains of the sacrifices made to the mountain genii.

The Panjal is connected by a transverse chain with the Wardwan Hills, and through these with the Zanskar system. West and north-westwards the Kajnag Mountains, with those enclosing the Kinshan-ganga Valley, complete the amphitheatre of snowy crests, and of pine-clad, leafy, grassy, or cultivated slopes encircling the lovely vale of Kashmir. According to the geologist Verchère, they are mostly old volcanoes, but none except a few in the north reach the line of perpetual snow. From the Haramuk Peak a prospect is commanded of Nanga Parbat and Dapsang, and lower down in the hazy distance the level plains of Srinagar, with their clusters of trees, winding streams, and lakes reflecting the azure sky in their limpid waters. Farther on, the hills are interrupted by the Kinshan-ganga and Kunhar Valleys, and again by the gorges of the Indus. But beyond these fissures the whole land is covered with mountains attaining elevations of 15,000 or 16,000 feet and upwards. West of the Indus they run parallel with the main stream and its tributary, the Swat, terminating at last in the Mahaban, which, seen from the plain, seems almost isolated.

Subjoined are some of the chief mountains, passes, and towns of the Western Himalaya, with their relative positions to each other :—



Vale of Kashmir.

The vale of Kashmir is one of the loveliest spots in the whole world. It has been sung by the Hindu and Persian poets as an earthly Eden, and the very name of Kashmir has throughout the West become synonymous with a land of marvels and enchantment. Modern travellers, furnished with the elements of comparison derived from an almost complete exploration of the globe, confirm all that the native poets have said of this heavenly region. And even were its magnificent prospects elsewhere rivalled, those who have the true sentiment of nature fully understand that there is no country whose real beauties do not surpass all the descriptions of poetry, all the most truthful pictures of the artist. The impression produced by the sight of the delightful valley is all the more profound that the contrast is more marked with the surrounding regions. Unless we reach it through the romantic gorges of the Jhilam, it can be approached only by difficult and tedious paths over the rugged crests of the Panjal, or down from the northern highlands and plateaux blocked with snow, ice, and rocks, and swept by keen blasts, which at times become fierce gales and snowstorms. After weeks or even months of such a journey through wild gorges and trackless passes, after the hardships of the camping-ground, intensified by extreme cold and even hunger, we suddenly enter this smiling land, where we may at last hope for rest from all our toils. Even the fatigue of ordinary travelling is now at an end. On reaching the Behat, as the natives call the Jhilam, the Vitasta of the Aryans and Hydaspes of the Greeks, we glide smoothly with the current down to Srinagar, where the full beauty of the valley is revealed. The stream broadens here and there into blue lakes; the fields and scattered hamlets reposing in the shade of the walnut and other fruit trees are almost screened from view by the wide-spreading branches of the leafy elm and plane; the vista changes with every turn of the stream, and still in the distance rise the eternal mountain ranges with their endless variety of snows, crags, and wooded slopes. The presence of man is everywhere recalled by towns, palaces, and gardens, while the ruins of temples and strongholds crowning every solitary eminence add the perspective of bygone ages to the realities of the present.

The climate of Kashmir is unique in India, resembling that of Western Europe, but with more stability. The year opens suddenly with the spring, but, as on the North Atlantic seaboard, there are equally sudden returns of chills and storms. The really pleasant season lasts from May to September, when the skies remain clear and bright, even while the south-west monsoon is sweeping over the plains of India and the Himalayan ranges. The moisture-charged clouds are seen rolling over the surrounding hills, but no rain falls in the valley except after a change of wind, or after an unusually hot day. The mean summer temperature is higher than on the Atlantic coast of France, and in the neighbourhood of the lakes and marshy lands clouds of mosquitoes often add to the lassitude felt by strangers in the tepid atmosphere. But in summer most of the European residents, limited by diplomatic convention to 350 for the year 1882, withdraw to some of the neighbouring upland valleys, amid flowering meadows and winding streams. Snow

seldom falls on the plain till December, and for about two months it melts and reappears alternately. During this season thick fogs often prevail, and may be seen from the surrounding heights rolling up the valley in successive waves, like those of the lake which formerly flooded the country. One of the most remarkable phenomena of the climate is the normal stillness of the atmosphere, whence a surprising calmness of the waters, in which the panorama of trees, mountains, and sky is nearly always vividly reflected.

There can be no doubt that the valley was really at one time a lacustrine basin, some 60 miles long by 36 miles broad, and running south-east to north-west in the same direction as the Himalayan system. But the traditions current amongst the natives regarding the discharge of this reservoir have no historic foundation, and are simply explained by the geological evidence itself. The inhabitants of the plain, like so many others elsewhere, were induced to associate with some heroic name, and assign a definite epoch to what was in reality the slow work of ages. The soil of Kashmir consists of alluvia, mingled with volcanic ashes from long-extinct craters commanding a section of the vast amphitheatre. The geological evidences of the varying water-level along the primitive shores are everywhere visible. Such are the *Karevas*, terraces standing at a mean height of from 250 to 300 feet above the basin, resting on one side against the mountain, and scored by temporary torrents or permanent streams on the side facing the plain. The Baramula gorge, through which the Jhilam escapes, shows similar terraces, the banks of the river at a time when it flowed at a much higher level than at present. All that now remains of the old reservoir are the lakelet of Srinagar, draining intermittently to the Jhilam, to the Manasbal basin, and the large Lake Walar, whose sedgy banks afford a cover to myriads of waterfowl. The Walar, which is from 10 to 14 feet deep, washes the foot of the mountains on its west and north sides, and thus assumes the aspect of an Alpine lake, like that of Geneva. It is yearly encroached upon by the alluvial deposits of the Jhilam, and the upper stream must sooner or later reach the level of the emissary which escapes to the Baramula gorge. From this point it descends from rapid to rapid towards the plains of the Panjab, 4,000 feet lower down, and 180 miles distant following the course of the river. There are few more romantic valleys than this approach to Kashmir, with its rocky peaks, magnificent timber, sudden windings, and foaming waters.

Inhabitants of Kashmir.

The inhabitants of the Western Himalaya are distributed according to the slope of the land and the course of its streams. While the northern and north-eastern districts are too elevated to be peopled, except by a few nomad tribes, the middle zone, where the snow remains only for a part of the year on the ground, has already a few towns and large villages in the sheltered spots. But there are no large masses of population till we reach the vale of Kashmir and the broad valleys opening southwards towards the Panjab.

The whole of the eastern region, which still forms part of Tibet geographically,

TYPES AND COSTUMES OF TIBETAN WOMEN OF LADAK.

also belongs to that country in respect of the origin, speech, and religion of its inhabitants. Amongst these are the Khampa, or Champa nomads, about 500 in number, who occupy the whole of the Rupshu plateau, some 4,000 square miles in extent, and who change their camping-grounds four times with the seasons. Their head-quarters is the village of Dora, which stands at an elevation of 14,000 feet above the sea near the Tibetan frontier. These nomads, whose chief occupation is the transport of merchandise between Tibet and Ladak, are noted, like their Tibetan kindred, for their cheerfulness, good-humour, and indifference to hunger, fatigue, and hardships of all kinds. Below an altitude of 11,000 feet they are no longer in their native element, and begin to suffer from the heavier atmosphere of the lower regions. A few Buddhist monks also reside in the monastery of Hanlé, which stands on a steep eminence rising to a height of over 15,000 feet on the marshy plain of like name. Next to the gold-washing station of Thok-yalung, in Tibet, this is probably the highest point in Asia permanently inhabited.

The Ladak and Baltistan Races.

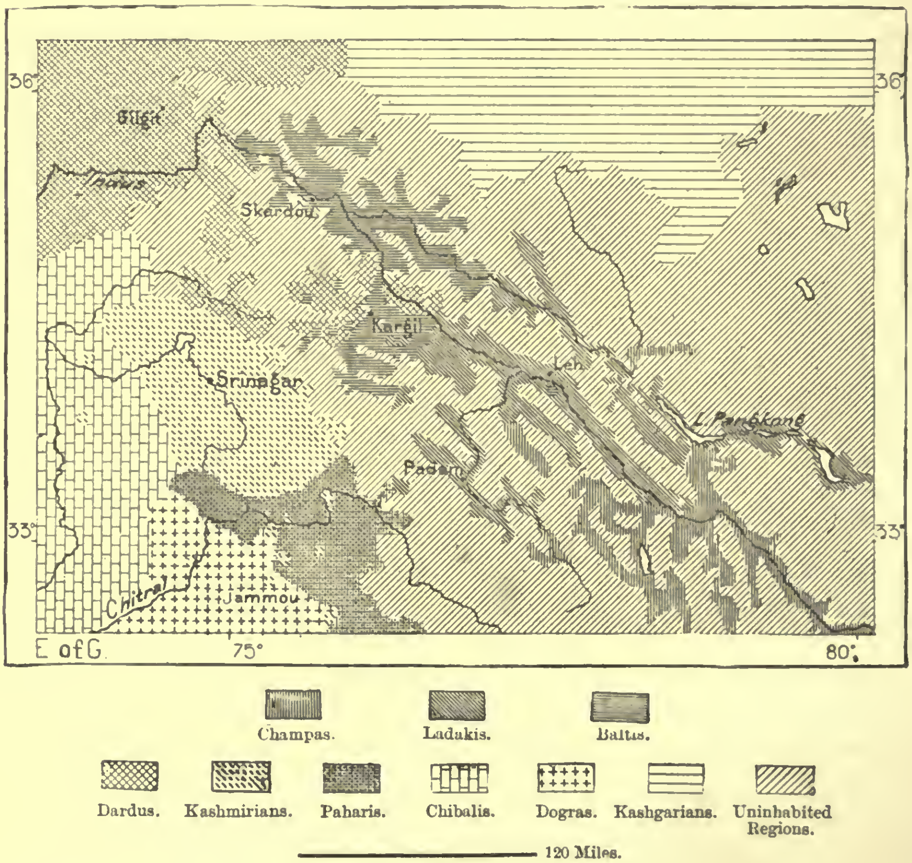
Like the Khampas, the Ladaki people of the Leh district, those of Kunwar, in the Upper Satlej Valley, the natives of Spiti, and to a large extent of Lahul, are all of pure Bod or Tibetan stock. The Ladakis have nearly all small, thick-set figures, broad features, high cheek-bones, oblique eyes. They are also distinguished by their kindliness, cheerful disposition, love of work, and friendly feeling towards strangers. They allow themselves to be oppressed by the lamas, for whom they build monasteries, temples, and *mani* inscribed with the sacred formula. But the difficulty of finding candidates for the priesthood appears to have increased of recent years to such an extent, that several monasteries have been abandoned. The small extent of inhabitable land checks the increase of population, which is further arrested by the prevalent practice of polyandria. Lower down half-castes, sprung of unions between Tibetans and other races, are numerous, and till the year 1871 these were still slaves of the government; but through the intervention of the geologist, Drew, they were all emancipated in that year. The only class still regarded as pariahs are the musicians and smiths, with whom marriage is strictly forbidden.

In other respects Hindu influences have already affected the Ladaki people, who now no longer expose their dead to be devoured by wild beasts. Several Sanskrit words have even penetrated into the current speech, which, however, differs so little from Tibetan, that the two peoples are able to converse together with perfect ease. Even the Khamba mendicants from the extreme east of Tibet can make themselves understood by the Ladakis. The natives of Spiti also speak pure Tibetan; but in the province of Lahul several idioms are still struggling for the ascendency. In some valleys the current speech is the Bunan, akin to the Tibetan of the Upper Satlej Valley, but with some marked peculiarities of structure. Elsewhere the Manchat, a Tibetan dialect mixed with Hindi and words of unknown origin, and the Tinan, also composed of diverse elements, are current.

In Lahul, Buddhism is already threatened by Brahmanism. Most of the lamas are little more so than in name, and in 1878 not more than seven in more than a thousand amongst them were engaged in religious matters. To propitiate the gods the natives have recourse to the Brahmans and lamas indifferently. They also invoke the trees and snakes, and perform special rites in order to obtain the aid of the demons. Even Christianity has found its way into Lahul, since the establishment of a Moravian mission at Kailang, in one of the Upper Zanskar valleys. Instruction is more general amongst the Tibetans of Kashmir than amongst the most

Fig. 31.—Populations of Kashmir.

Scale 1 : 6,500,000.



inhabitants of the kingdom. Most of them can read; they prepare rude maps with great ease, and are excellent guides to the English surveyors. According to Harcourt, a nun in a Lahul convent is said to have acquired sufficient knowledge of astronomy to calculate eclipses.

The Balti-pa—that is, people of Balti, living on the Shayok, the Upper Indus, and its tributary, the Suru—are regarded by most observers as akin to the Ladakis. They speak a Tibetan dialect, differing little from the others, and are distinguished by the oblique eyes, high cheek-bones, and other physical peculiarities of the Bod

race. The points in which they differ from their neighbours would seem to be due partly to their milder climate, partly to the change of life produced by their conversion to Mohammedanism. There can be no doubt that there is also a considerable admixture of Aryan blood, and M. de Ujfalvy regards some of the tribes as even of purer Aryan stock than the neighbouring Dardu people. They are taller and less thick-set, with larger nose and fuller beard than the ordinary Tibetans, while the mixture of blood is also shown in their mental qualities. They lack the gentle and cheerful disposition of the Bod-pa, and are also less generous and more worldly-wise, although still inferior to the Kashmiri in shrewdness and capacity for trade. They are fond of violent exercises, and addicted to the game of polo, which has recently been introduced into England. Baltistan is a favourite recruiting-ground, and the Maharaja has here raised a complete regiment of soldiers, all dressed in the Highland costume. Although converted to the Shiah sect by missionaries from Khorasan, the Balti people still practise many Hindu rites, and preserve the three sharply-defined castes of priests, agriculturists, and artisans. Polyandria has been replaced by polygamy, and the women, who enjoy complete equality in Ladak, are reduced to a state of thraldom in Dardistan. Here the narrow valleys no longer afford space for the growing population, so that large numbers of Baltis are yearly driven to seek their fortunes in Kashgaria, Lower Kashmir, the Panjab, Simla, and other districts where there is a demand amongst the English for masons, "navvies," and labourers. They emigrate in gangs, taking with them loads of dried apricots, which they dispose of along the route, and after years of hard work perhaps return with a small stock-in-trade, chiefly copper wares, to their upland valleys.

The Dard Tribes.

Below the Balti country, the Dard or Dardu people occupy the whole bend described by the Indus round the Nanga Parbat. They are also found in the Gilgit basin, and beyond the spurs of the Hindu-kush, in the Mastuj and Chitral districts draining to the Kabul River. Scattered settlements occur in the upper Kishan-ganga, along certain parts of the Indus, and in the Dras district of Baltistan. Several villages in the neighbourhood of Leh are even peopled by Dardu colonists traditionally from Gilgit. Whatever be their customs, religion, and political system, all observers are unanimous in classifying the various Dardu tribes with the Aryan family. Leitner, who first explored the Gilgit Valley, regarded all the inhabitants as of one racial stock. Yet Biddulph has shown that some of the tribes present considerable physical differences, while their Aryan dialects are often very distinct. Nevertheless the Dardu, whom their Tibetan neighbours call Brok-pa, that is, "Highlanders," form on the whole a tolerably well-marked ethnical group. They are generally of middle size, strong and well proportioned, with aquiline nose, straight brow, and rather coarse features, but with the European oval form. In intelligence and courage they yield in no respect to the Baltis, and are also noted for a great love of freedom.

The caste system prevails in Dardistan, and as in India, it is here due to the intrusion of a conquering race. The highest caste is that of the Rono, who command the same respect as royal princes, and from amongst them the ruling chiefs generally choose their ministers. Next to the Rono come the Shin, who form the majority in the states on the Indus west of the Nanga Parbat and in a part of Upper Gilgit, and from them the whole country takes the name of Shinkari. They are probably to be identified with the Shina mentioned in the Mahabharata and in the Laws of Menu, who were confused by the early European commentators with the Chinese. They formerly occupied the Indus valleys much lower down, whence they were gradually driven to their present snowy abodes. Proud of their ancient origin, they despise all pursuits except agriculture and the chase; yet they are said to be extremely avaricious, and most of them have their hiding-places in the hills, where they hoard up coins, copper vessels, jewellery, and other valuables. Although Mohammedans, they abstain from the flesh of cattle and birds, and even from cow's milk. But if this is due to former Brahmanical practices, it is remarkable that, unlike the Hindus, they entertain the same horror of the cow that other Mohammedans do of swine. An ox-hide placed in one of their springs is supposed to inevitably bring on a fierce storm.

Far more numerous than the Shin are the Yashkun (Yeshkun), or third caste, who call themselves Burish, Burishaski, or Urishki. They form the bulk of the Dard race, constituting nearly the whole of the population in Hunza, Nagar, Yasin, and the majority in Gilgit, Darel, and Astor. The fourth caste of the Kremin, answering to the Sudras of the Hindus, includes the potters, carpenters, and other artisans, and are probably descended from the aborigines, who offered the least resistance to the invaders. Below them are the Dúm or Dóm, who are met under diverse names in all parts of Kashmir, where they still stand in the relation of a conquered race to the rest of the inhabitants. They are the gipsies of the country, and, like the gipsies elsewhere, are mostly smiths, tinkers, and strolling minstrels.

Except those of Ladak, who have become Buddhists like their neighbours, all the Dard peoples are now Mohammedans. But while some are Sunnis or Shiahs, others belong to the sect of the Mollai, or "divine." Remains of the old paganism also survive in many villages, especially in the southern districts towards the Afghan frontier. The Chilasi, who occupy the western slopes of Nanga Parbat, are at once the most recent and fanatical of all the Moslem communities. Not satisfied with enslaving their captives of other cults, the rajahs of Yasin and Hunza, in the Upper Gilgit basin, have established a regular slave trade, and when strangers cannot be had, they sell or exchange their own subjects for dogs.* According to Biddulph it is no exaggeration to say that about one half of the inhabitants above forty years of age have passed a considerable portion of their existence in slavery. The man-hunting wars, combined with the victorious and disastrous expeditions of the Kashmir armies, have largely tended to depopulate the land. In the province of Gilgit, where there are at present only 4,500 souls, there must have formerly been six or seven times that number, judging at least

* Becher, "Journal of the Bengal Asiatic Society," iii. 59.

from the now abandoned cultivated terraces to be seen everywhere scattered over the mountain slopes. Still undeciphered rock inscriptions occurring on either side of the valley attest the ancient civilisation of Gilgit, while numerous stone circles, like those of Brittany, occur higher up in the Yasin district. Few Himalayan lands enjoy a finer climate or more fertile soil than the Lower Gilgit Valley. The riverain tracts, which are only 5,000 feet above the sea, yield all the products of the temperate zone, and maize, cotton, the fig, pomegranate, and mulberry are here also cultivated. The Gilgit silk fabrics, both pure and mixed with wool or cotton, are noted for their great firmness.

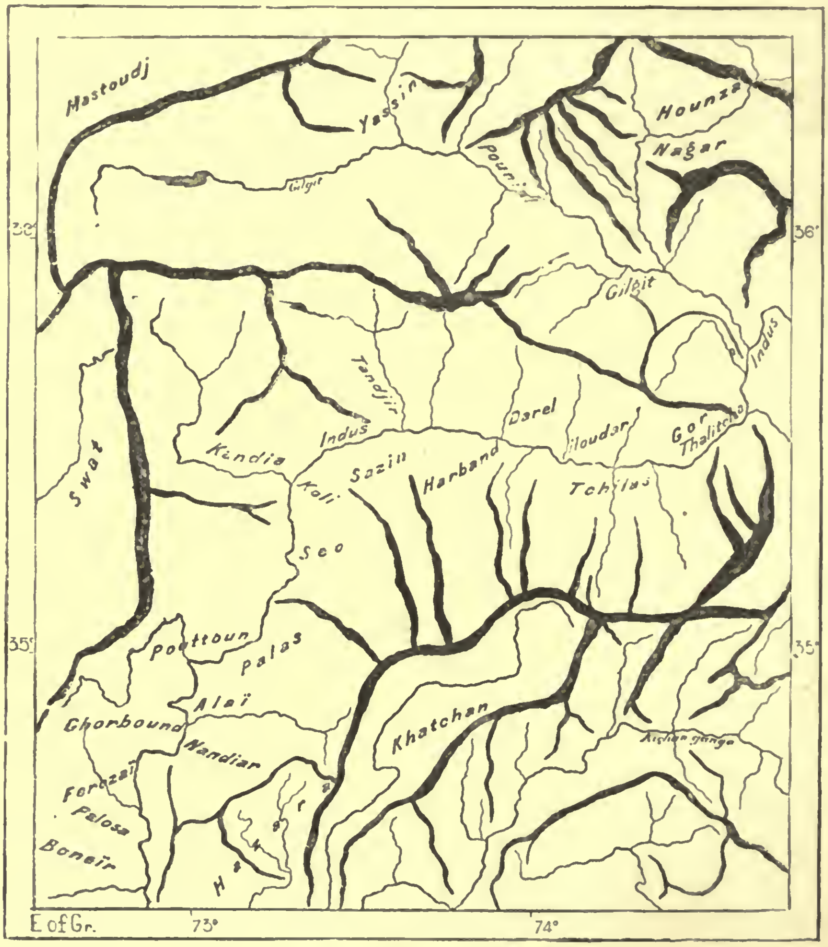
Since the year 1847, when the English officers Young and Vans Agnew crossed the Indus at Bunji (Bowanji), Gilgit has been explored by Leitner, Drew, Biddulph, and others. Here Hayward was killed near the hamlet of Darkot in 1870, and his body having been redeemed by his fellow-countrymen, was laid under a clump of trees near the walls of Gilgit. At present the villages of Bunji, Sai, Gilgit, and Sher, with their cultivated lands and orchards, are overawed by Kashmir forts, which, with their castellated walls, square towers, and donjons, look like mediæval strongholds. But beyond their range the Dardu tribes are either politically independent, or merely pay a nominal tribute to the Maharaja. In the north the Nagar tribe, occupying the northern slope of Raki-posh, is compelled to pay a double tribute of gold dust and apricots to its more powerful neighbours of Gilgit and Hunza. The Hunza people themselves, who hold the Hindu-Kush valleys as far as the frontiers of Sirikol in Chinese Turkestan, are dreaded on account of their courage and predatory habits. They levy black-mail on the caravans passing through their territory, and make frequent raids into the surrounding lands. Yasin, lying north-west of the Punial, a tributary of the Kashmir, being defended by its rugged mountains and almost impracticable defiles, has nearly always succeeded in maintaining its political independence, but suffers from the oppressive despotism of a local raja. At this point of the Himalayas the British and Russian political systems approach nearest through their respective feudatory states. Here the line of separation is formed by a mountain range and a few narrow valleys.

The Dard tribes of the unexplored section of the Indus between the confluence of the Astor and the Hazara district, seem of all others to have best preserved the ancient usages and traditions, although several of them have taken refuge here from the Afghan valleys. Their territory is distinguished by the name of Yaghestan, that is, "Rebel land," from the fact that it has never acknowledged a foreign master. The Chilasi, Koli, Herbandi, Sazini, Palasi, east of the river, the Hudari, Dareli, Tangiri, and people of Seo, Puttun, and Kandia, west of the river, besides some others, form so many petty republics, one of which, Thalicha, consists of seven houses only. According to the information collected by Biddulph, the English resident in Gilgit, in the whole of Yaghestan there are 63,600 male adults, which would give a total population of at least 300,000. The men of each village are summoned by the beat of the drum to the *sigas*, or general assemblies, at which all questions of general interest are discussed. After electing the *jushtero* or

delegates to settle the details, the meeting is dissolved by the sound of a whistle, and all absenting themselves from the gathering are subject to a fine. All important decisions require the unanimous vote of those present, a single protest being sufficient to adjourn the debate. In case of foreign invasion the communities combine against the common enemy. The chief wealth of these highlanders is derived from their flocks of sheep, for which they are sometimes obliged to seek fresh

Fig. 32.—Yaghestani Peoples of East Dardistan.

Scale 1 : 2,000,000.



pastures amongst other tribes, and especially in the Yasin district paying a tribute of salt, tobacco, gold dust, or animals, for the privilege. But this payment implies no sort of political subjection. Thus the Tangiris, who have frequent relations with Yasin, boast of having been the refuge of all the rulers from time to time driven out of that territory, the incursions from which they have always successfully resisted.

In the Upper Swat valleys, known more particularly by the name of Kohistan,

the chief tribes, Torwalik and Bushkar, are also of Dard stock, but they have not been able to maintain their political independence. Although now Mohammedans of the Shiah and Sunni sects, the Yaghistani tribes have retained many of their old national customs. Thus their women go about uncovered, and enjoy a large share of personal freedom. The mollahs also in administering justice are required to conform to the local traditions. Murder, which is a very rare crime, is punished, not by the community, but by the friends of the victim.

The several tribes have each their own patois connected with Kashmiri through the dialects current amongst the peoples on the west side of the Jhilam River. The Burishki, however, which is spoken in Hunza, Nagar, and Yasin, is said by Biddulph to be of "Turanian" origin, although he hesitates to class it with the Turki languages. Amongst all the Dard people the Pushtu (Afghan) has become the literary standard, and south of Puttun, which is perhaps the most flourishing community in Yaghestan, Pushtu alone is employed. The people of Boneir, as well as of the Lower Swat Valley, being pure Afghans, their speech differs little from that of Kabul. But those residing on the left bank of the Indus, in the ravines above Derbent, are known as Himcha, that is, "Half-Castes," and from them the neighbouring Yuzufzai Afghans keep quite aloof. The Palosa or Parusa settlement, on the right bank, consists of Wahabites from India, who are supported by their co-religionists, and who are the implacable enemies of British rule. Numbering about 500, they practise the exercise of arms, build forts, and send their spies and prophets to every part of Mussulman Asia. Recently the *Akhund*, or spiritual chief of the Sunni clans in Swat, had acquired an almost undisputed authority amongst the faithful in Afghanistan and the Indus regions. He received envoys from every part of India, and even from Constantinople.

The Kashmirians.

Like the other river basins of this region of the Himalayas, the Upper Jhilam Valley has its distinct populations. The Kashmiri, who have given their name to the whole kingdom, but who themselves obey masters of an alien race, occupy the lacustrine plain above the Baramula gorge, beyond which narrow district they are found only in small communities. Physically the Kashuri, as they call themselves, are perhaps the finest of all the Hindu peoples. Of middle size, well proportioned, strong and active, they are also distinguished by regular features, high forehead, slightly aquiline nose, delicate mouth, brown and soft eyes. The women, who have earned a universal reputation for beauty throughout India, are specially distinguished by their pure and noble traits, which they retain even in old age. The intelligence, wit, shrewdness, and good taste of the Kashmiri are proverbial; but being exposed to the attacks of fierce mountaineers on all sides, their chief weapons of defence have been cunning and flattery. They fawn on their conquerors, who leave them scarcely enough of the fruits of their labour to keep them from starvation.

Although two-thirds of the Kashmiri Aryan dialect consists of Sanskrit and Persian elements, strangers have great difficulty in learning it. Its only direct

relations are with the idioms spoken towards the south-east in the Upper Chenab Valley, which serve as a connecting link between the Srinagar and Panjab forms of speech. In other respects the Kashmiri are good linguists, acquiring the languages of their masters with the greatest ease. Nearly all speak either Dogri or Hindustani, and many understand Persian, the "French of the East," which since the epoch of the Moghul Empire has been the official language of the Court of Kashmir. One alone of the native castes has preserved with its religion the memory of its origin. This is the caste of the Brahmans, who are here called "Pandits," as if they had specially merited a title in India proper reserved for the lettered classes. Most of them at any rate are public notaries or scribes in the government offices. Others betake themselves to trade, but never to agriculture or handicrafts. Notwithstanding the conversion of the great majority to Islam, the caste system has been upheld in various professions; but it is far less rigorously adhered to than elsewhere in India, which is probably due to the fact that the Aryan immigration took place before the strict separation of classes in Hindustan. At the lowest extremity of the series is the caste of the Batals, who are held to be so impure, that they would be regarded as blasphemers were they merely to invoke the name of Allah. Like the Doms of Dardistan, they are probably the descendants of the conquered aborigines. The dialect of the shawl-weavers also contains, according to Leitner, a considerable element derived from a language anterior to all others in North-west India.

West and south-west of the vale of Kashmir, the hill region watered by the Jhilam, after its junction with the Kishan-ganga, is inhabited chiefly by Chibhali, that is, by Rajput immigrants who have become Mohammedans. They are mainly to be distinguished by this circumstance and its attendant social changes from their eastern neighbours, the Brahmanical Dogras, who occupy the foot of the hills on both sides of the Chinab in the district from them called Dugar. The Chibhali and Dogra Hindu dialects are closely related, and in fact merge from district to district imperceptibly one into the other. In spite of their adopted Mohammedanism the Chibhalis have even preserved the old castes, based originally either on racial antagonism or on differences of professions. The bulk of the peasantry still belong to the subjected Jats, descendants of the old owners of the land, while other immigrant tribes have hitherto maintained a certain pre-eminence. The Rajput masters, proud of their warlike habits, mostly despise a life of manual labour or trade, preferring to serve either as soldiers or as government officials. In other respects they have greatly changed since their immigration from Rajputana, and have long ceased to practise female infanticide. The Moslem Rajputs have so little religious zeal, that they have often allowed their Hindu wives to retain their household gods, and some places of pilgrimage are frequented by Mohammedans and Brahmans alike. Till recently Islam was gradually encroaching on the peoples at the foot of the hills, but Brahmanical influences now appear to be again in the ascendant.

East and south-east of the vale of Kashmir, the valleys sloping towards the Chinab, as well as the banks of that river, are also inhabited by tribes amongst

whom the various castes represent so many original racial elements. By their neighbours known by the collective name of Pahari or "Highlanders," these tribes in stature and features resemble the Panjabi Hindus, but their habits of life have rendered them hardier and more robust. Their dialects, unintelligible to the Dogra and neighbouring lowlanders, form a transition between those of the Panjab and Kashmiri. The language changes with every valley, and 20 miles off the Pahari no longer understand each other.

Besides the settled communities of the Pahar, who live on agriculture and the produce of their orchards, there are others, who migrate regularly with the seasons. Such are the Gaddi, shepherds and goatherds, whose villages lie in the mountains, but who in summer descend to the outer hills skirting the plains. The Gujar, on the contrary, who live in the low-lying districts, drive their buffalo herds to the mountain pastures during the fine season. The woodmen, who cut up the deodars in the forests and send them floating down the Chinab, also lead a nomad life between the cold uplands and the plains of the Panjab. Some of the Pahari are Mohammedans; a few families in the north-east have remained Buddhists, like their Lahul neighbours; but the great majority have accepted the Brahmanical cult, while still retaining many of the old pagan rites. In the Padar district on the Upper Chinab temples are still raised to the *nag-devtas*, or "Snake Gods," who rank with the other divinities of the Hindu mythology. In the Dragar Mountains west of the Chinab the iron smelters never open a furnace without erecting an altar to the god Dragar, burning in his honour clarified butter, and leaving on the altar the spoons and other objects connected with the sacrifice.

Topography of Kashmir.

In Ladak there are no towns except *Leh*, capital of the old kingdom, and now annexed to the Indian Empire under the "mediatising" government of the Maharaja of Kashmir. Leh lies over 11,000 feet above the sea, some 2 or 3 miles north of the Indus, where it is commanded by a citadel, serving also as a palace, with its high white walls resting on a concave base, in the Tibetan style of architecture. The old quarter with its narrow winding streets is grouped at the foot of the castle, while the modern bazaar occupies the lower part of the town at the head of the route from Srinagar. The surrounding slopes are laid out in gardens and cornfields, interspersed with a few willow and poplar groves. Leh is the centre of the trade of Kashmir with Tibet and Chinese Turkestan. Here is the starting-point of the yearly caravan which takes to Lassa silks, shawls, saffron, English goods, and which brings in exchange Chinese teas, woollen stuffs, and turquoises. According to Drew, its imports and exports amounted in 1873 to £95,000 and £82,000 respectively. At the departure and return of the caravans, in spring and early winter, the Kashmiri, Yarkandi, and porters of all races form large encampments round about Leh. The route taken by the caravans is commanded at intervals by the ruins of the forts where the agents of the former ruler of Ladak exacted the transit dues. Thus *Fort Khalsi* below Leh guards a wooden bridge thrown over a gorge of the Indus, which is here only 65 feet broad. In a mountain valley 18 miles south of

Leh stands the largest monastery in the country, inhabited by 800 lamas and nuns.

Skardu (*Iskardo*), capital of Baltistan, known to the inhabitants of the surrounding districts by the name of *Balor* or *Palor*, is a mere cluster of hamlets lying

Fig. 33.—The Zoji Pass.

at an elevation of about 7,500 feet above the sea, in a rocky plain stretching north-east of Leh, and watered by canals from the Indus. Two rocks about 1,000 feet high, and polished by ancient glaciers, rise over against each other on either side

SRINAGAR—BRIDGE OVER THE JHILAM.

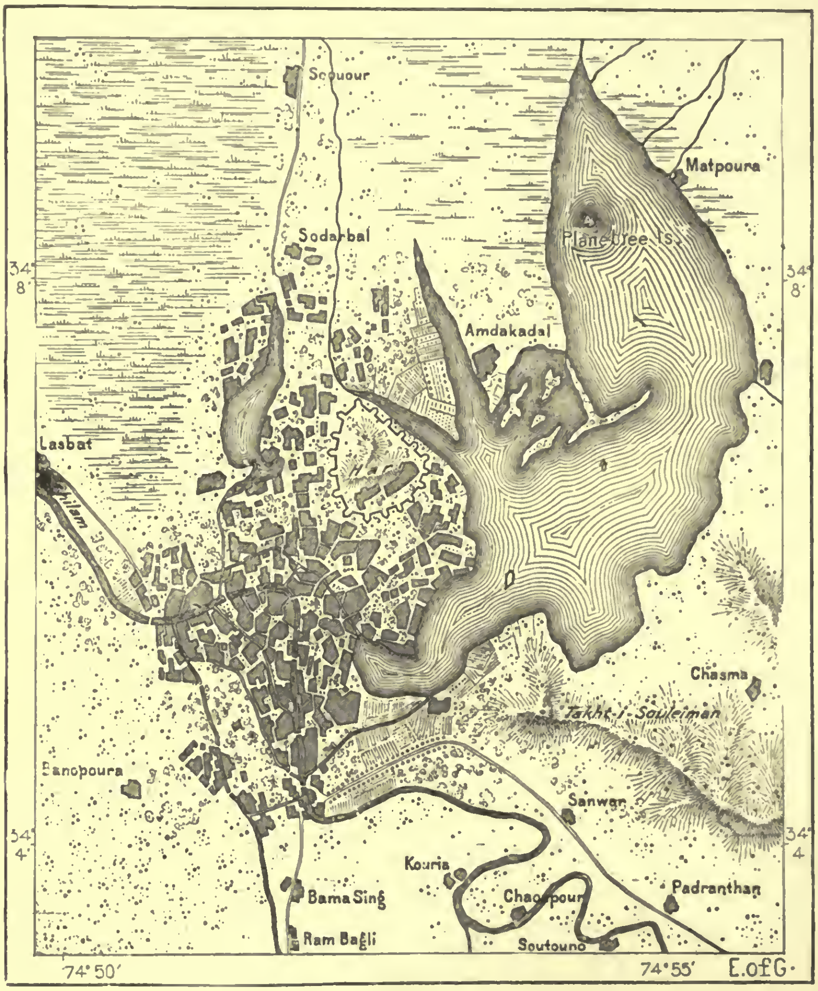
of the river, and are crowned, one by recent fortifications, the other by the ruins of a citadel. Nearly all the houses are flat-roofed, with small mud structures on the terraces, which serve as summer residences. Here also are dried the apricots, which are the chief resource of the country, and from which it takes the name of Suri-Bhutan, or "Apricot Tibet." Under a more hospitable clime its convenient situation would soon raise this place to considerable importance. The two valleys of the Indus and Shayok, the Tsu-fo or "male river," and the Tsu-mo or "female river," form a junction higher up, while close to Skardu lies the fertile Shigar Valley, with its running waters, clusters of plantains, and distant view of the glaciers. Numerous caravans take this route, and weavers from Kashmir have settled here to work up the valuable pashm or silky wool imported from Tibet. A few gold-washers are also employed in the neighbouring glacial torrents, where the gold is said to be liberated by the action of the glaciers against the rocks. A certain importance as stations and trading-places is also enjoyed by the romantic villages of *Kargil* and *Dras*, lying south-east of Skardu, on the route between Srinagar and Leh. Here the track from the Baltistan uplands down to the "golden prairie" watered by the Upper Indus and to the vale of Kashmir crosses the Zoji Pass, where "Siva sits on his snowy throne."

Islamabad, the "Abode of Islam," the chief town in East Kashmir, was formerly known by the name of Anat-nag or Anant-nag—that is, the "Lake of Vishnu's Snake," a name recalling the old serpent worship. The boats ascending the Jhilam stop a little below this place, where the upland valleys, each traversed by a foaming torrent, begin to spread out like a fan. This is the natural starting-point of the traders proceeding to the Upper Chinab basin, and Islamabad also derives some importance from its saffron industry. In the distance are visible the ruins of the temple of *Martand*, dedicated to the sun, and traditionally said to have been built by the sons of Pandu, the heroes of the Mahabharata. The building, with its graceful colonnade, ornamental friezes, and bas-reliefs, evidently dates from the period of Greek art introduced in the time of the Seleucides, and imitated by the Hindu architects. It is the finest monument in Kashmir, and one of the most remarkable in the East, its grandeur being much enhanced by the isolated position it occupies on a bluff rising above the vale of Kashmir over against the snow-clad mountains of Panjal. The course of the Jhilam, flowing by *Bijbahara*, ancient capital of the valley, leads to other ruined temples of the same period near the village of *Avantipur*, and at *Padranthan*, where Srinagar formerly stood. In the whole of Kashmir there are over seventy religious edifices in the same Græco-Baktrian style.

Srinagar, "City of the Sun," and summer residence of the Maharaja, stands on both banks of the Jhilam, whose rapid current is here traversed by seven wooden bridges resting on stone foundations. The city is intersected by numerous canals, one of which communicates with the *dal*, or "lake," which ramifies farther east into bays and straits, with a mean depth of 8 or 10 feet. This "Indian Venice" is enlivened by boats, suggestive of gondolas, gliding about in all directions, while a number of *ghats*, or "steps," lead down to the main stream. But although sur-

rounded by water, the city itself lies completely above the level of the inundations. High blocks of stone, which break the force of the current, serve as foundations for the brick or wooden houses; and these structures also resist the shock of the frequent earthquakes much better than stronger buildings. Every house is isolated, rising, without any regular plan, either in confused groups or in the

Fig. 34.—Srinagar.
Scale 1 : 100,000.



2 Miles.

midst of large trees. As in Tiflis, most of the roofs are covered with grass plots, which in spring are decked with bright flowers. Hence at this season Srinagar, seen from the Hari Parbat, an eminence lying to the east, looks like a vast hanging garden stretching away beyond the horizon. It is the most populous city in the Himalayan regions, and abounds in temples and palaces. Since its foundation, at the beginning of the sixteenth century, it has often been a state capital; and

Jehanghir, one of the Moghul emperors, here erected some pleasant retreats, which still rank amongst the marvels of the "Vale of Roses." The Takht-i-Sulaiman, or "Throne of Solomon," rising to the south-east, between the present Srinagar and Padranthan, is crowned by the ruins of the oldest temple in Kashmir, dating, according to the natives, from the third century before the Christian era. From this eminence the finest prospect is afforded of the vale, with its sparkling waters, palaces, and shady avenues.

Every foot of the surrounding plains is under cultivation, and floating gardens have even been established on the lake itself. These are formed of long rafts bound together with the roots of aquatic plants, and covered with earth, on which melons and cucumbers are chiefly cultivated. The average price of one of these plots, which are fixed to the bottom of the lake by means of a stake, is from a shilling to half-a-crown for a strip 30 feet long by 8 or 10 broad. The roots of the nenuphar and the fruit of the water-chestnut (*tsapa bispinosa*) are ground into flour, which supplies the bread of a large portion of the people. The chief manufacturing industry is still that of the *dushala*, or shawls woven from the *pishma* (*pashmina* or *pashm*), the soft down of goats imported from Ladak, Tibet, and Kashgaria. Thousands of wretched artisans, whose daily earnings do not average more than sixpence or sevenpence, are employed in a foul atmosphere, weaving those narrow strips from which are made the famous Cashmere shawls so highly esteemed, especially in France. Four-fifths of these goods were, till recently, sold in Paris; but during the last ten years the industry has been much affected by the competition of other manufacturing towns in the Panjab, and especially by the change of fashion in the West.* Here are also some silk-spinning, filigree, and papier-mâché works; and the trade of the place, although greatly reduced, is still considerable. Unfortunately, notwithstanding the laws, one of the "staples of traffic" are young girls, smuggled away in their infancy to the large cities of Northern India.

Between Srinagar and the Panjab the chief trading stations are *Sopur*, the "Golden City," and *Baramula*, both lying west of the vale. Above Baramula still rise the ruined walls of a Buddhist tope.

In the hilly region of South Kashmir and Hazara, where communities of Hindu origin are now settled, there are few large towns, although several occupy important positions along the great historic highways. *Muzafarabad*, whose fort commands the Jhilam and Kishan-ganga confluence, stands at the outlet of the chief route from Kashmir by the Baramula gorges, and enjoys easy communication with Attok and Peshawar. *Mari*, in the British district of Hazara, and near the mountain whence it takes its name, is one of the health resorts founded by the English on the outer Himalayan hills. It stands on a ferruginous crest over 7,000 feet above the sea. *Abbotabad*, lying farther west and near the frontier, is important only as a military station, serving to overawe the "rebel" tribes of Yaghestan, who hold the western valleys draining to the Indus. The military cantonment stood formerly farther south, at *Haripur*, on the plains and near

* Yearly value of the shawls woven in Srinagar from 1860 to 1870	£130,000
" " exported to Europe " "	90,000

Torbela, where the Indus escapes from the gorges. The most savage point in this wild riverain tract still preserves its Persian name of *Derbend,* or "Gate." *

Panch (*Punch*), situated 3,300 feet above sea level, on a fine plain at the confluence of two small tributaries of the Jhilam, is the most advanced town of Kashmir towards the south-west. It communicates with the capital by the Panjal and Ratan Passes. *Mirpur,* in a hilly district near the important station of *Jhilam,* on the Panjal railway, has monopolised the export trade in corn in this region. *Bhimar* was the starting-point of the Moghul emperors on the route to Kashmir, and every stage along this route has preserved the palace where they stopped on the way. Of all the stages on this imperial highway, the largest now is *Rajaori,* or *Rampur,* as it is now called. In this district, which has so often changed hands, almost every hill is crowned with a fort, and most of these mediæval strongholds have still their garrisons, composed of Dogra troops, who are at once rural police and custom-house officers.

One of the largest and strongest of these forts is that of *Akhnur,* which commands the Chinab at the point where it enters the plains of the Panjab. At certain times of the year the people of this district are chiefly occupied in collecting and forming into rafts the planks of the deodar and pine trees which the woodmen throw into the rapids higher up the river.

Jammu, official capital of the Maharaja's states, cannot compare with Srinagar, either in the picturesque beauty of its situation, its climate, industries, or population. It does not even occupy a convenient central position in the kingdom, for it lies on the extreme southern frontier towards the Panjab. When selling Kashmir to Gulab-singh for £750,000, the Company was not sorry to have its ally residing in the vicinity of the British encampments. He is master in his own territory, but from his capital he can perceive on the southern horizon the dust raised by the tramp of the English troops. Jammu lies on the very skirt of the plain, some 40 miles from the Tavi, a small tributary of the Chinab, on its left bank. Its high palaces and the gilded roofs of its temples are visible from a great distance by the few travellers who visit this place, which lies beyond the trade routes, and which is, moreover, badly supplied with water from tanks. These evils, however, will soon be remedied by a canal, which will convey an abundance of pure water from the Chinab, and by a branch line intended to connect it with the Indian railway system.

There are no other large towns in the south-eastern districts of Kashmir. *Ramnagar,* on the Upper Tavi, and *Basoli,* on the right bank of the Ravi, are both old capitals, now almost deserted. *Parmandal,* however, which lies north of Jammu, is still a famous place of pilgrimage, where devotees assemble in multitudes to wash out their sins in the waters that well up at the foot of its sandstone rocks. In the hilly region watered by the Upper Chinab the most animated place is *Bradawar,* or *Bhaderwah,* the "Fortress of Buddha," whose wooden houses stand at an elevation of about 5,500 feet above sea level. Hither the Gurkha officers of

* Literally, the "bolt or fastening of a door," from *dar* = door and *band* = bolt, which are *Persian,* not *Turki* words, as stated in the original.—Editor.

the British regiments resort with their families to breathe an atmosphere as pure as that of their native valleys in Nepal. *Kishtwar*, the *Kartawar* of the Kashmirians, lies at the same altitude as Bradawar, on a fertile plain encircled on all sides by wooded and snowy mountains.' Although regarded as the capital of the Chinab Valley, it is little more than a village, whose importance is entirely due to

Fig. 35.—Akhnur and Jammu.

Scale 1 : 415,000.

12 Miles.

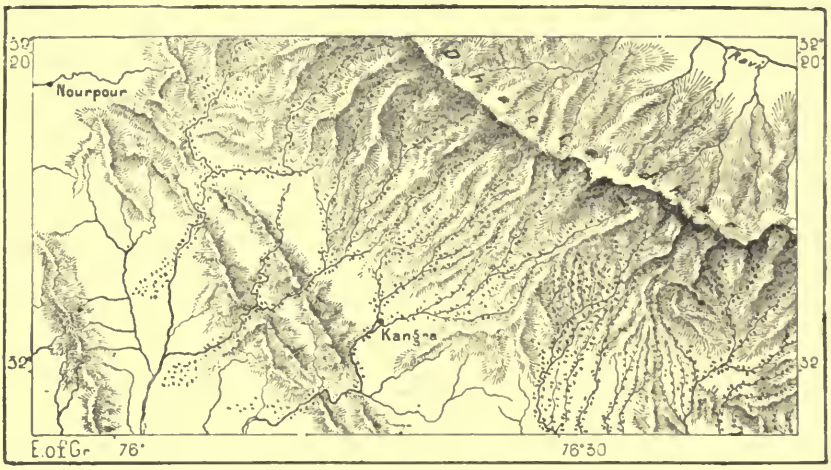
its position at the junction of the routes from Lahul, the Wardwan Valley, and the vale of Kashmir. It affords a view towards the south-west of a mountain torrent falling in successive leaps a total height of over 2,500 feet. It is the highest cascade in the whole of the Himalayas, and from Kishtwar, 2 miles distant, may be heard the roar of its waters, which sparkle in the morning sun with all the hues

of the rainbow. "These are the scarves of the fairies," say the native Paharis "bathing in the flood."

The State of Chamba, which comprises the hilly district east of Jammu and Kishtwar, in the Upper Ravi Valley and in parts of the Chinab basin, is inhabited, like the Pahari country, by Hindu Rajputs, Thakar peasants, and Gujar and Gaddi nomad pastors. This territory, which at the time of the treaty of 1846 was still included in Kashmir, was soon after transferred from the Maharaja to a petty prince with merely nominal power. The state takes its name from its capital, which, although standing on the banks of the Ravi, 3,000 feet above the sea, is almost as hot a place as the neighbouring plains. Yet the British Government has established a sanatorium towards the south-west on an eminence in the last ridge of the Himalayas. Lying at a height of 7,450 feet above the sea, this superb station of *Dalhousie* commands a fine view of the Ravi Valley, the pine-clad Kangra

Fig. 36.—Traces of Ancient Glaciers in the Kangra Valley.

Scale 1 : 870,000.



Erratic Boulders.

15 Miles.

Hills, and the plain stretching away towards Amritsar and Lahore. The pleasant retreat of *Dharmsala* occupies the slopes of the Dhaola Dhar, or "White Mountain," in the south-east. This sanatorium has become the chief town of the Kangra district, and of the numerous tea plantations covering the slopes of the surrounding hills. From Dalhousie and Dharmsala the English command *Nurpur* and *Kangra*, the ancient *Nagarkot*, which are the two most important cities in the valley of the Bias River. Although twice plundered by the Mohammedans, the temple of Kangra is still one of the richest in India. Some of the surrounding hills are crowned by imposing fortresses, which were supposed to be impregnable before the introduction of modern siege tactics. The locomotive will soon enter the Kangra Valley at *Pathankot*, which is to be connected by rail with Amritsar.

The territory of Kulu, comprising the Upper Bias Valley, is directly administered by the English, while the region of low mountains and outer hills, above the

point where the river enters the Kangra district, is occupied by the tributary states of Mandi, Suket, and some other petty principalities, whose rajas enjoy a nominal independence. The term Kulu, a contracted form of Kulut Pit, means the "World's End," although beyond it the still more elevated lands of Lahul and Spiti stretch away to the uninhabited wilds of Khachi. But seen from the plains, Kulu must have seemed to the Hindus like a barrier to farther progress in that direction. Northwards the Rohtang range, forming a continuation of the Himalaya proper, rises to heights of 17,000 or 18,000 feet, while towards the west the Bara Bangahal Mountains, which send down glaciers to the Upper Ravi Valley, maintain an equal elevation as far as their junction with the Dhaolo Dhar chain. Even here the peaks exceed 11,000 feet, and the whole region is divided by numerous cross ridges into narrow valleys of difficult access, but often presenting magnificent highland views. Not more than the twenty-fifth part of the surface is arable; the cultivated parts have a mean altitude of at least 5,000 feet, and some of the villages stand at an elevation of 11,000 feet. Nevertheless, Kulu is traversed by one of the great trade routes leading from India to Central Asia. The track running from Amritsar, up the Bias Valley, to Yarkand crosses the Rohtang Pass at a height of 13,370 feet, beyond which it winds through the rugged and glacial district of Lahul, and over the Bara-lacha Pass, to the Zanskar, one of the head-streams of the Indus. In 1863 seventy-two highlanders were overtaken by a fierce storm, and buried in the snows on the Rohtang Pass.

Like those of the neighbouring lands, the natives of Kulu belong to several races who have successively occupied the country. The Rajputs and Paharis are of small size and very dolichocephalic, with low cheek-bones but prominent zygomatic arches. Amongst them are also found some of a very dark type, probably representing a still more primitive stock. The prevailing dialects are the Pahari and Hindustani, with some Tibetan elements either derived from an aboriginal population or introduced through intercourse with the neighbouring lands. The old usages have been best preserved in the little-frequented southern district of Sioraj, where polyandria is still maintained, as in so many parts of Tibet. Several men, generally brothers unwilling to divide their inheritance, have one wife in common, spending all their savings in decking her with rings, bracelets, necklaces, pendants, and other gold and silver ornaments, often of very remarkable workmanship. Even amongst the peasantry of Kulu and other West Himalayan valleys many artistic treasures are still found. On the banks of the Bias, Chinab, and Jhilam some of the household utensils consist of copper vases marvellously embellished and covered with Persian inscriptions two hundred or three hundred years old. No such highly-finished artistic objects can now be produced in the country, whose rich silver lodes have scarcely yet been worked.

Officially, the natives of Kulu belong to the Brahmanical religion, yet in the district there are no Hindu temples older than the eighteenth century. The ancient shrines all suggest the form of the Tibetan Buddhist temples, nor has snake-worship even yet entirely disappeared. Every village has, in fact, preserved its local deity, now disguised under some Hindu name introduced by the Rajputs. Here the

"devil god" is also worshipped under the form of an arm-chair.* The numerous hot springs are also much venerated by the natives, who undertake pilgrimages to bathe in these waters. And now fresh changes are in course of preparation under other influences. Some English speculators have already penetrated into the lower valley, to develop the tea culture, as in Kangra, and houses of Anglo-Indian structure are here and there springing up by the side of the native cottages.

The former capital of Kulu, although still bearing the title of *Nagar*, or "city," is in reality a mere village. Nor is *Sultanpur*, the present capital, a much larger place. Lying below Nagar, but still at an altitude of 3,900 feet above the sea, and on the right bank of the Bias, at its confluence with another mountain torrent, it consists merely of a number of houses crowded together within the narrow limits of an outer enclosure. From this point a recently constructed mule-path leads westwards over the "White Mountain" and across the Babba Pass (10,230 feet) down to the tributary state of Mandi, thus avoiding the long detour of the Bias valley. *Mandi*, that is, the "mart," capital of this isolated territory, is a larger and more modern-looking place than Sultanpur. It has even a suspension bridge over the Bias, besides regularly-constructed carriage roads. In the neighbourhood are some iron mines and salt pits opened in the sub-Himalayan Hills. The range skirting the west side of the Mandi and Suket Valleys, and separating the former from the region of low hills, is the famous Sikandar-ka-dhar, or "Alexander Mountains," where some ruins observed by Vigne are supposed to be the remains of altars raised by the Macedonian conqueror on his return to the West. Near these hills is the celebrated mineral Lake of Jawalamuki, or the "Fire God," frequented by some fifty thousand pilgrims every year.

East of Kulu and Spiti the Satlej basin, between Tibet and the lowlands, is peopled by numerous petty subject states. Of these the most important is Bashahr (Bussahir), which stretches along both sides of the river from the outer Himalayan gorges to the Tibetan frontier. Its Rajput raja claims a royal ancestry of one hundred and twenty generations. But he is now under the control of a British agent, and his territory is little more than a narrow ravine about 120 miles as the bird flies. Yet this confined space enjoys every variety of climate, with a corresponding diversity of vegetation, from the dwarf shrubs of the uplands near Tibet to the splendid vines of Chini, still flourishing at an altitude of 8,750 feet, and the banians and tropical plants of the lower districts. But the pent-up atmosphere is everywhere oppressive, and the summer heat, reflected by the bare rocks, almost unendurable. The clearing of the forests on the slopes has also deteriorated the climate, rendering it more extreme, while the side terraces offer less resistance to the tropical rains. The vegetable humus, and with it the population, thus slowly disappears.

Ethnical, linguistic, and religious transitions, analogous to those of the climate, take place all along the valley. The upper region is occupied by peoples of Bod origin, speaking Tibetan and practising Buddhism, while Aryan-speaking Hindus have penetrated into the lower districts. The Satlej Valley itself may be regarded as simply a transverse fissure between India and Tibet, which the British Govern-

* Calvert, "Kulu, the Silver Country, and Vaziri rupi."

UPPER SATLEJ VALLEY—ROUTE TO TIBET—VIEW TAKEN FROM NEAR ROGI.

ment is now converting into a commercial highway. The rajas along this route have renounced all transit dues, and from the station of Simla, between the Satlej and Jamna basins, the track winds round the flank of the mountains, rising gradually along the Satlej to the Tibetan frontier for a total distance of 150 miles. Sooner or later it will reach Lassa, with a branch ascending the Para Valley north of the Leo Porgyal to the Rupshu plateau towards the Upper Indus, Lake Pangkong, and the Karakorum range. Scarcely any serious obstacles are presented by this natural route, which must become the future highway of Central and Southern Asia. But at present the only pack animals employed in the Upper Satlej Valley are the mountain sheep, which, after being shorn at Rampur, return to Tibet laden with corn.

There are no villages either in the Upper Satlej Valley or in that of its tributary, the Spiti. *Dankar*, or rather *Drankhar*, that is, "Cold Fort," capital of this Hima-

Fig. 37.—Route to Tibet from Simla to Shipki.

Scale 1 : 2,000,000.

30 Miles.

layan province, well deserves its name, perched as it is, like an eyrie, on a crag 1,000 feet above the Spiti torrent and 12,730 feet above sea level. But *Rampur*, the "City of Rama," capital of a native state in the Lower Satlej Valley, is a much-frequented mart, especially for the purchase of Tibetan wools. *Bilaspur*, capital of another petty state, and lying at the entrance of the plain some 1,600 feet below the level of Rampur, is also a trading-place of some importance. In the year 1762 the Satlej, dammed up by a landslip in the gorges above Simla, entirely ceased to flow, and developed a lake 400 feet deep, stretching to the neighbourhood of Rampur. After an interval of forty days the river suddenly reappeared in a huge wave 100 feet high, which swept Bilaspur completely away, and lower down changed the hydrographic system on the plains of the Panjab.

CHAPTER IV.

CENTRAL HIMALAYAS.

Upper Jamna and Ganges Basins.—Simla, Garhwal, Kumaon, Nepal.

By piercing right through the whole Himalayan system, the Satlej and Indus Valleys enabled the Rajput conquerors to turn the mountain barriers and take possession of West Tibet. But farther east the upper valleys of the Jamna and of the Ganges head-streams give access only to the southern watershed of the Trans-Himalaya. This is in fact the parting-line which forms the political frontier of the Hindu states, and of their common heir, the Anglo-Indian Empire. Still farther east the southern Trans-Himalayan slope does not even belong entirely to the Indian state of Nepal. In this direction the Chinese Empire, represented by partly Tibetan garrisons, encroaches as far as the Himalaya proper, and consequently comprises the sources and upper courses of many streams which flow through the Kosi to the Ganges and Bay of Bengal. Still the natural region of the Gangetic slope of the Himalaya forms on the whole a sufficiently well-defined political area. About three-fourths of the whole land constitutes a distinct state, that of Nepal, which is attached by a diplomatic fiction to the Anglo-Indian system. Most of this region is uninhabitable, being covered in the north with snows and glaciers, in the south by the marshy forests of the terai. Between these two zones, the parallel Himalayan chains and cross ridges form a labyrinth of steep and rocky slopes, where all tillage is impossible. But relatively to the limited stretch of arable land along the river banks and on the first mountain terraces, the country is sufficiently peopled, at least in the British districts. As to Nepal, for which there are no available statistics, the population is variously estimated by different writers at from 2,000,000 to 5,000,000.

The Simla District—Garhwal.

The city of *Simla*, surrounded by some twenty petty Hindu states which have preserved a semblance of political independence and whose frontiers are as intricate as those of the former Germanic Confederation, occupies a separate domain between

GENERAL VIEW OF SIMLA, TAKEN FROM JAKO HILL.

the provinces of the Western and Central Himalayas. Although of recent formation, its favourable position and the caprice of an Indian viceroy have made it the summer capital of the whole empire. As soon as the hot season begins, the roads leading from the plains towards Simla become crowded with equipages and vehicles of all sorts conveying the Calcutta officials and their suites to this health resort in the sub-Himalayan hills. Some of the chief branches of the administration thus migrate yearly between the two cities. The English settled in India naturally sought, amid the advanced spurs of the Himalayas, convenient sites where they might recover the vigour and muscular strength lost on the burning plains of the Ganges and Indus. In this way a complete cordon of new stations, forming a sort of Indian England, stretches along the outer Himalayan ridges at a mean elevation of 6,000 or 7,000 feet. Nowhere is the hold that these Western

Fig. 38.—Simla.

Scale 1 : 600,000.

conquerors have on the land so vividly realised as in these pleasant retreats, so different in aspect from the cities of the plains, whose castellated walls and glittering temples are visible on the distant horizon. Simla, the largest of all these English towns, is also geographically the most important. It is not merely a city of pleasure, as might be supposed by the casual spectator of its fêtes and durbars. Standing on a ridge between the Satlej and a tributary of the Jamna, it marks the head of the triangle formed by the two basins of the Indus and Ganges; it guards the only relatively easy approach to Tibet and the Chinese Empire; lastly, it lies between the two large states of Kashmir and Nepal, and by the numerous cantonments on the hill-sides and neighbouring plains it overawes the formerly warlike Sikh and Rajput populations.

The first English dwelling was erected in 1819 on the heights of Simla, which had, so to say, been rediscovered two years previously by the brothers Gerard.

But the place remained even without a name till 1826, and it had still only sixty houses when visited by Jacquemont in 1831. Yet it has ranked since 1864 as the second capital of British India. Standing on the summit and slopes of a crescent-shaped ridge, it covers a space of about 6 miles with its palaces, hotels, and pleasure-grounds, which terminate eastwards in the rounded crest of the Jako Hill, overgrown with deodars, oaks, and rhododendrons. The city has already outgrown the natural water supply of the district, which will soon have to be supplemented by conduits from more distant Himalayan streams. South of Simla, which is defended on the west by the Jatok batteries, several other health resorts are dotted over the crests or slopes of the hills. *Subathu*, *Kasaoli*, *Dagshai*, and *Kalka* are mainly military stations guarding the approaches to Simla. But the whole of the hilly region commanded eastwards by the wooded Chaur, forms an almost isolated mountain mass between the Sivalik and the Himalaya. Here every eminence affords a glorious view of the forests and snows of Garhwal, right away to the magnificent highlands, where rise the farthest head-streams of the Jamna.

This region of welling waters is one of the sacred lands of Hindu mythology. Here are grouped many of the peaks celebrated in old Aryan song, but now known by other names. The Jamnotri, at the very source of the river, is overshadowed by the Banderpunch and Sargaroin, culminating points of the system, which, although over 20,000 feet high, are entirely free from glaciers.

The Jamna, traditionally supposed to rise in the immediate vicinity of the Ganges, flows, not from the main Trans-Himalayan range, but from the rugged slopes of the Himalaya proper. Judging from the respective volume of their waters, the true head-stream is not the branch known as the Upper Jamna, but the Tonse, which, after making a wide sweep round to the west, joins the Jamna near its entrance on the plains. The latter came to be regarded as the main branch, probably on account of the hot springs, which bubble up near its source about 9,700 feet above the sea, and which are the resort of numerous pilgrims. According to the legend, it was in the lakelet formed by these springs that the Ape-god Hanuman one day extinguished his burning tail, since which event the water has remained hot; hence also the name of Mount Banderpunch, or the "Ape's Tail." The Jamnotri thermal springs are the hottest in the whole of the Himalayas, their temperature being 224 Fahr., or about three degrees below boiling-point at this altitude.

The inhabitants of Garhwal are essentially Hindus. The few Tibetan elements still found amongst the Khasiya, or native Rajputs who have lost caste by alliance with aliens, are daily disappearing before the constant stream of immigrants from the south. The possession of the valleys was formerly contested by rival chiefs, who erected on every eminence one of those *garh*, or fastnesses, whence the country takes its name. Under this feudal system Garhwal could not prosper, but the people were reduced to a still more deplorable plight, when the land was overrun by the Gurkhas of Nepal at the beginning of the present century. Decimated by war and sold into bondage, the Khasiya were much reduced in numbers; but they have now begun again to increase, and their cultivated plots are everywhere encroaching

on the waste or fallow lands, and even on the pastures and jungles of the terai. But there are no Hindu towns in the Upper Jamna Valley, where all the centres of population are of British origin. These are at once health resorts and military cantonments, whence the English are able easily to overawe the surrounding

Fig. 39.—Dehra-Dún, the Sivalik, Gates of the Ganges and Jamna

Scale 1 : 750,000.

Central trigonometric station of India.

12 Miles

tribes, while enjoying the pure mountain air and magnificent scenery of this region.

Amongst these stations are *Chakatra*, standing at an elevation of over 7,000 feet above the sea, on a plateau overlooking the Jamna and Tonse confluence, and *Massuri*, which lies at about the same altitude, on a perfectly regular ridge rising immediately above the Dehra or Dehra-dún Valley. Next to Simla, it is the most

important place in the Central Himalayas, and is defended on the east by the military station of *Landur*, both now forming a single municipality. Northwards the Tibetan frontier range is shut out from view by intervening chains, but the *dún* of Dehra, the broadest and most regular in India, together with the Sivalik mountain barrier, a typical sub-Himalayan chain, present a most remarkable tableau. The two romantic gorges forming the gates of the Jamna and Ganges are both visible, one to the west the other to the south, while the *Dehra* cantonments occupy a central position on the plain between the Massuri and Sivalik Hills. The climate of Massuri is very equable, the temperature varying little throughout the year, and even from day to night. But during the wet season it is exposed to the full fury of the monsoon, when the rains sometimes last for eighty or eighty-five days uninterruptedly. Hence many English residents have preferred to settle lower down in the Dehra Valley, which, although warmer, is much better sheltered from the winds and rains. This delightful retreat, which is only 2,270 feet above the sea, sprang up, during the seventeenth century, round about a temple built by a Sikh apostle, who claimed the power of being able to die and rise again at pleasure. The lofty portico and enamelled dome of the temple, which still exists, render it the most conspicuous object in the valley. The English town has been chosen as the head-quarters of the trigonometrical bureau, chief centre of geographical studies for India and the Himalayas.

Although within the area of drainage of the Ganges, Dehra lies close to the water-parting of the dún, whence numerous streams flow down the wooded slopes of the Sivalik, on the one hand to the Ganges, on the other to the Jamna. This lovely valley, thus draining to two different basins, cut off from India by the Sivalik ridge, and communicating with the plains only through the two "gates" of the great rivers, could not fail to play an important part in Hindu mythology. Here is the refuge of the sons of Pandu; here also Rama came to do penance; every hill, fountain, and grove is associated by innumerable legends with the memory of the Snake-god, of Siva, Indra, and other divinities. The sacred character of the district is attested by one of the oldest monuments of India—an erratic quartz boulder on a terrace overlooking the right bank of the Jamna near its junction with the Tonse. This famous block, or "rock of *Kalsi*," as it is called from the name of a neighbouring village, bears the features of an elephant and the tables of the Buddhist law, inscribed on its face 2,150 years ago by order of King Asoka. The spot where the Jamna, swollen by the waters of the Tonse, enters the dún, was even then regarded as the limit of India in this direction. The much more accessible gorge, through which the Jamna penetrates to the plains after traversing the dún, seems to have been held in much less veneration. Here stand the ruins of the Badshah-mahal, or hunting palace of the Moghul emperors; and the neighbouring hills, as in the days of Akbar and Jehanghir, still serve as a refuge for the elephant, tiger, leopard, and other wild beasts.

Having become one of the centres of British influence in India, the Dehra-dún has also recovered the agricultural importance which it had lost under the Gurkha administration. The canals, which traverse the valley in all directions, have been

restored, the jungle has again been cleared, and the cottages of the peasantry have once more sprung up beneath the shade of the mango groves. Tea culture has been successfully introduced, and immigrants have been attracted to the plantations from all the surrounding provinces, and even from Afghanistan itself. Since 1815, when the Gurkhas were expelled, the population has trebled, while new elements have been grafted on the old Brahman and Rajput stock. Here and there are still met a few survivors of the Mehra and Dúm tribes, who seem to have been the aborigines of the country. The Mehra keep aloof in the wooded districts near the Ganges, while the dark, crisp-haired Dúm have been scattered over the whole valley, where they formerly worked as slaves. Through hatred of their old oppressors, some of them have been converted either to Islam or to Christianity.

The Upper Ganges Basin—Hardwar.

The Upper Ganges basin, which is larger than that of the Jamna, begins at the Tibetan frontier, on the southern slope of the Trans-Himalaya. The Bhagirati-ganga, or northern branch, even receives its chief affluent, the Janevi, from Tibet itself, through the formidable Nilang gorges. The stream, which though not the largest, is nevertheless regarded as the true Upper Ganges, rises 13,600 feet above the sea, at the foot of a glacier, terminating with crevassed walls over 300 feet high. This is the "mouth of the cow" mentioned in Hindu mythology, but probably never witnessed by any of its worshippers till Hodgson reached the spot in 1817. Here is the first step of the throne of Siva, the five great mountains bounding the horizon on the east and north-east being venerated as the special seat of the Maha Deo, or "Great God." From these Kailas, or Rudru Himalah Mountains, one of which rises to a height of 21,800 feet, the snows descend in a vast cirque, filling every valley with a mass of ice and moraines. The peaks are even higher farther south, where the Kidarnath, or Mahapanth, also dedicated to Siva, attains an elevation of 22,750 feet. The isolated Tharlasagar, or Moira, is nearly as high, while several other summits of the chain skirted on the west by the Bhagirati-ganga exceed 20,000 feet. The three last snow-clad crests have received the name of Trikanta, or "Three-headed Mountain."

The venerated Gangotri, in the Upper Bhagirati-ganga Valley, is the highest point which the Brahmans have been able to occupy; and although no pilgrimage is more meritorious, few devotees of the goddess venture to perform it. The great majority of the pilgrims are arrested by the difficulties and hardships of the route at the less elevated shrines on the banks of the sacred stream. They formerly bore the flag of Yama, "which leads to death," and called themselves by the name of *anivarttina*—that is, "those who return not." All are obliged to perform their first ablutions in the united waters of the Bhagirati and Janevi, both of which here flow in tremendous gorges. Here they receive the bread blessed by the hand of a Brahman, and cast into the foaming torrent a tuft of herbage—symbol of their sins. Farther down, every station, every spring and bluff, is a hallowed spot, where the faithful perform preparatory rites before reaching the highest shrine.

Although held in less veneration than the Bhagirati, the Alaknanda is nevertheless the main upper branch of the Ganges. It is nearly twice as broad, and the mountains whence it receives its first feeders are more elevated than those of Gangotri. The Ibi-Gamin, rising to a height of 25,280 feet, is the loftiest of all the Trans-Himalayan peaks that have yet been measured. Its Tibetan name, meaning "Great Mother of Snow," shows that it is held to be unrivalled in this part of the

Fig. 40.—Source of the Ganges.

system. Like all the other surrounding peaks, it has been dedicated by the Hindus to one of their divinities, and is by them known under the general name of Nanda Parbat, although on most English maps called Kamet. The Ibi-Gamin Pass, crossed in 1856 by the brothers Schlagintweit, stands at a height of 20,260 feet, and is the most elevated of all the Himalayan passes utilised by the nomad pastors. Even the most frequented passes of this region, the Mana (Chirbittia-la) in the west, and the Niti (Chindu) in the east, are many hundred feet higher than Mount Blanc. The Bhotia, of Tibetan stock, although claiming to be Hindus and speaking

both languages, are the sole intermediaries of trade between the two slopes. They number about three thousand, and in summer are always met in gangs driving their pack-sheep over the mountain passes.

In the Garhwal and Kumaon highlands the most frequented temple is that of *Badrinath*, which has been enriched by the offerings of the numerous pilgrims visiting it, especially every twelfth year, when the planet Jupiter enters Aquarius. At this period from forty to fifty thousand devotees flock to Badrinath, when the surrounding district is converted into a temporary fair. *Ihosimath*, or *Jhosimath*, *Vishnuprayag* on the Alaknanda, and *Kidarnath* on a tributary of the same river, are also popular places of pilgrimage, where Brahman communities live on the generosity of the faithful. But the only town worthy of the name in the whole country is *Srinagar*, which lies near the entrance of the Alaknanda Valley. It is not the capital of Garhwal, a distinction that has been conferred on the village of *Paori*, situated in a more open district farther south.

A much-frequented temple stands at the junction of the Bhagirati and Alaknanda, where the two streams take the name of Ganga. From its position this temple takes the name of *Deoprayag*, or "Divine Confluence." But farther down lies the far more famous group of shrines known as *Hardwar*, or *Hari-dwara*, that is, "Vishnu's Gate," or else *Hara-dwara*, that is, "Siva's Gate," the followers of each sect claiming for their chief divinity the honour of having opened the "gate of the Ganges." But it is probable that temples were erected in the gorge even long before the names either of Vishnu or Siva had begun to be invoked. Several carvings discovered amid the ruins of *Mayapur*, the city which preceded Hardwar and which was visited by the Chinese Buddhist pilgrim Hwen-t'sang, are evidently anterior to the present forms of the Hindu religions.

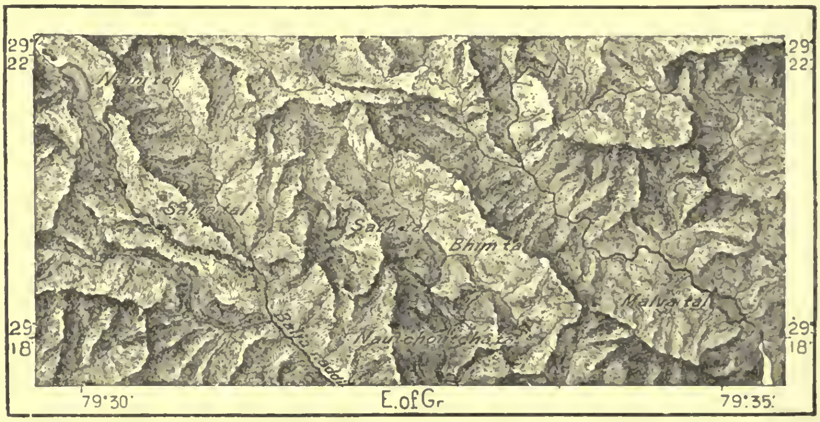
At this point the Ganges is already a fully-developed river. After issuing from the highland regions a little below the Bhagirati and Alaknanda confluence, it traverses the district of the dúns, where it receives on both banks the waters of the lateral valleys. But to reach the plains it has still to pierce the hills through a gap some miles wide, where its branches wind round a number of wooded islets. Here stand the temples of Hardwar on the right bank, over against another sacred edifice crowning a hill on the opposite side. Southwards stretches the handsome *Kunkul* quarter, occupied by rich Brahmans and traders from every part of India. Multitudes of much-venerated monkeys disport themselves among the trees of the surrounding gardens.

The pilgrimages begin in the middle of March, and last for nearly one month. Hardwicke, Raper, and other early English visitors estimated them at upwards of two millions, a number which Johnson found in 1827 to be actually below the reality. In 1867 the camping-grounds occupied an area of no less than 23 square miles. But this vast concourse consists not only of the faithful, who come to kiss the imprint of Vishnu's foot and bathe in the sacred tank or in the Ganges itself, but also of traders of every race and caste from all parts of India. Of late years, however, the visitors seem to have greatly fallen off, notwithstanding the general increase of population in the peninsula. The construction of roads and railways

has tended to concentrate traffic in the large cities, while religious zeal has diminished to such an extent that the pilgrims now seldom exceed seventy thousand, except every twelfth year during the feast of Aquarius. The interference of the British authorities to isolate the sick during epidemics and for other sanitary purposes could not fail also to diminish the number of visitors to the shrines. In 1819, so great was the press of the crowd eager to bathe in the sacred waters, that four hundred and thirty were drowned or trampled to death. Formerly faction fights occasionally broke out between the rival sects, and as many as eighteen thousand dead bodies are said to have been strewn over the ground round about the sanctuaries on one of these occasions in 1760. But while losing its importance as a religious town, Hardwar has taken a high position as an agricultural centre. It now stands at the head of the great irrigation canal of the Doab, which, notwithstanding the opposition of the Brahmans, is fed by the sacred waters of the Ganges.

The main stream is joined on the plains by the Ram-ganga, which flows from the Kumaon Hills south of the Alaknanda for a total distance of 400 miles. *Almora,*

Fig. 41.—The Kumaon Lake.
Scale 1 : 200,000.



capital of Kumaon, lies in this basin, on an eminence commanding an extensive view of the surrounding lands. This ancient stronghold, which often changed hands during the local wars, has now become a favourite health resort, thanks to its pure atmosphere and elevated position of 5,360 feet above the sea. It is rivalled in these respects by the modern town of *Ranikhet*, situated 500 feet higher up on a plateau, which offers the advantages, rare in the Himalayas, of abundant water, a level site, and excellent wood and stone building materials. It has been proposed to remove the military convalescent cantonments of Simla to Ranikhet, where the air is more wholesome, and where several military establishments have already sprung up near the Nepal frontier. But most of the civilians follow in the suite of the Governor of Allahabad, who has chosen for summer residence the still more elevated town of *Naini-tal* (6,320 feet), so named from a lake dedicated

to the Goddess Naini, or Parvatti, the Hindu Venus. In 1815 nothing stood on this spot except a temple surrounded by a few hovels. Now a delightful little town stretches along the narrow strip forming a north-western continuation of the lake. Handsome buildings crown every summit, and pleasant retreats are dotted over the amphitheatre of verdant slopes up to the crest of the hills. The surrounding heights scarcely exceed 8,000 feet in elevation above the sea, but few other

Fig. 42.—Naini-Tal.
Scale 1 : 25,000.

0 to 65 feet — 65 and upwards

1,100 Yards.

spots in the Himalayas present a more charming prospect, the European character of which endears it to the English residents.

Several other cavities in the hills south-west of Naini-tal are filled with other *tal*, or lakes, all the emissaries from which flow to the river Gola near its entrance on the plains. All these fresh-water reservoirs are of small size, the Naini-tal covering no more than 50 acres, with an extreme depth of 100 feet, while the Bhim-tal, or Siva's Lake, the next largest, is only three-quarters of a mile long, and even narrower than Naini-tal. The very existence of these little lacustrine basins in the Central Himalayas is a remarkable phenomenon, the cause of which

has been much discussed by geologists. Here landslips are frequent, and in 1880 one of these avalanches buried a part of the town of Naini-tal, together with one hundred and eighty of its inhabitants.

The Kali, Sarju, Sardah, or Gogra, one of the most copious streams of the Central Himalayas, was adopted in 1816 as the limit of British India towards Nepal. Like the Alaknanda, this head-stream of the Ganges receives its first waters from the Trans-Himalaya on the Tibetan frontier, and all its upper affluents are fed by glaciers. This rugged region of ice and rocks is commanded by the Nanda peak, so named from Nanda-devi, or the "Goddess Nanda," most revered of all the local divinities. After crossing a dangerous pass within sight of this queen of snows, which they till recently spoke of as "the highest mountain in the world," the Bhotia natives never fail to sacrifice a goat in her honour. The Nanda-devi

Fig. 43.—Nanda-Devi and Milam Glaciers.

Scale 1 : 250.000.

6 Miles.

has an altitude of 25,661 feet, while the Kiungar Pass, which lies nearest to the frontier, is 1,550 feet higher than Mount Blanc. It is much frequented, notwithstanding the difficult ascent through the rugged Gogra-ganga Valley and over the crevasses of the Milam glacier. The village of *Milam*, which lies at an elevation of over 11,000 feet near the foot of the terminal moraine, is crowded with travellers during the short season of traffic. But, like *Martoli* and other villages situated farther down, it is completely abandoned after September, when the whole population takes refuge in the lower valleys. The famous pandit and Himalayan explorer Nain-singh was for a considerable time a schoolmaster in Milam.

Nepal.

Nepal is one of the "unknown lands" of India. Although British suzerainty is acknowledged by the raja, and a British resident is stationed in the capital with a body-guard of sepoys, the frontier is strictly closed to ordinary travellers, and even to the staff of the topographic bureau. Hence the altitudes of the Himalayan giants towering above Central Nepal have had to be calculated from the plains, while to obtain accurate descriptions of the interior, it has been necessary to employ Hindu pandits, disguised either as traders or monks. The history, languages, and inhabitants of the country have been chiefly studied by the few Englishmen settled in Katmandu as physicians or political agents.

The existence of Nepal as a state distinct from the rest of India is explained by its geographical features. Here, better than elsewhere, it becomes obvious how

Fig. 44.—Routes of European Travellers and Pandits in Nepal.

Scale 1 : 9,000,000.

purely conventional often are the so-called "natural" divisions traced solely according to river basins. Nepal is traversed from north to south by several large tributaries of the Ganges, such as the Karnali, Gandak, and Kosi, separated from each other by lofty ranges. The very highest elevations on the globe are even found between the Bhotia-kosi and the Arun, head-streams of a Ganges affluent. Yet the limits of these fluvial basins nowhere serve as frontiers to Nepal. This state, forming a vast rectangle which stretches west and east for over 420 miles, with a mean breadth of less than 80, develops its frontier lines in a direction at right angles with its river valleys. The upper section of these rivers belongs to the Chinese Empire, while their lower courses are comprised within the limits of British India. The true natural frontiers of Nepal are formed on the north by the vast desert plateaux between the Himalaya and Trans-Himalaya, on the south by the marshy forests of the terai. The populations of every valley lying between

the snowy ranges and the southern swamps tend to form distinct political communities, which have been grouped by conquest alone in one state. This state consists, broadly speaking, of vegetable zones rising in terraces on the flanks of the Central Himalayas, and its geographical unity depends rather on climate than on its areas of drainage. Its political limits have been diversely modified by wars, invasions, and treaties. But notwithstanding all these changes of frontier, the geographical contrasts, with their effects on the social life of the people, are none the less real. At the beginning of the century Nepal stretched much farther westwards than at present. It would even occupy the whole of the Himalayan slopes but for their great length and the consequent difficulty of maintaining the communications from one end of the kingdom to the other.

The surface of Nepal presents greater contrasts of relief than are elsewhere found in the crust of the earth. Between the lowest depressions and highest peaks the vertical distance is nearly 5 miles, so that the atmosphere of the snow-clad crests is more than half lighter than that of the lower districts. As in the Western Himalaya, the Nepalese mountains are separated from the plains by an advanced buttress of hills forming an eastern extension of the tertiary Sivalik range. The Cherriaghati, as this section of the sub-Himalayas is called, is pierced at intervals by mountain torrents flowing to the Ganges basin. The outer hills are thus separated by the intervening longitudinal depression of the dúns or maris from the Himalayas proper, which rise terrace above terrace to the supreme scarps of the Tibetan plateau.

In West Nepal the almost isolated Narayana ridge skirts the deep valley of one of the "seven" Gandak rivers. Here the culminating point is the Dwalaghiri (Dhaolo ghiri), or "White Mountain," which was long supposed to be the highest peak on the globe, but which is rivalled eastwards by the Morshiati, Barathor, and Yassa. The Gosainthan, or Kirong group, whose most elevated crests are the Deorali and Dayabang, is 3,000 feet lower than Dwalaghiri, but is more venerated, probably because it lies nearer to cultured populations. From the fissures in its rocky sides spring the three sacred cascades which form the Lake of Nilkhiat, the "Blue-necked god." From this reservoir flows the Trisul-ganga, so named from the trident of Siva, who caused it to spring from the rock.

Since the recent surveys, Mount Everest (Gaurisankar or Chingopamari), the magnificent peak of East Nepal consecrated to the divine couple, Siva, God of Force, and Parvatti, Goddess of Beauty, takes rank as the culminating point of the globe. To Nepal also belongs Kinchinjinga, which from its vast girdle of snowfields takes the name of the "Five Glittering Crests." It stands between this state and Sikkim, at the northern extremity of the Singhalila transverse ridge. Several other peaks in this region exceed 23,000 feet. Yet there can be no doubt that they are rivalled by other summits in the Trans-Himalaya, which here forms the water-parting between the Tsangbo and Ganges basins, but which lies mainly within Chinese territory. The pandit who made the circuit of Gaurisankar in 1871, had constantly in view other lofty crests, which seemed fully as elevated as those of the Himalaya proper. In fact, the highest of all seemed to belong to the

Trans-Himalayan system. It was visible in the distance towering towards the north-east above the great Dingri Maidan plain.

With such enormous differences of relief, the communications are naturally very difficult between the valleys and the plateau, as well as between valley and valley. Most of the streams flowing from Tibet pierce the advanced barrier of the Himalaya through gorges so deep and precipitous that no traveller has yet ventured to explore them. Hence the routes are continued by ascending the neighbouring

Fig. 45.—Mount Everest (Gaurisankar).

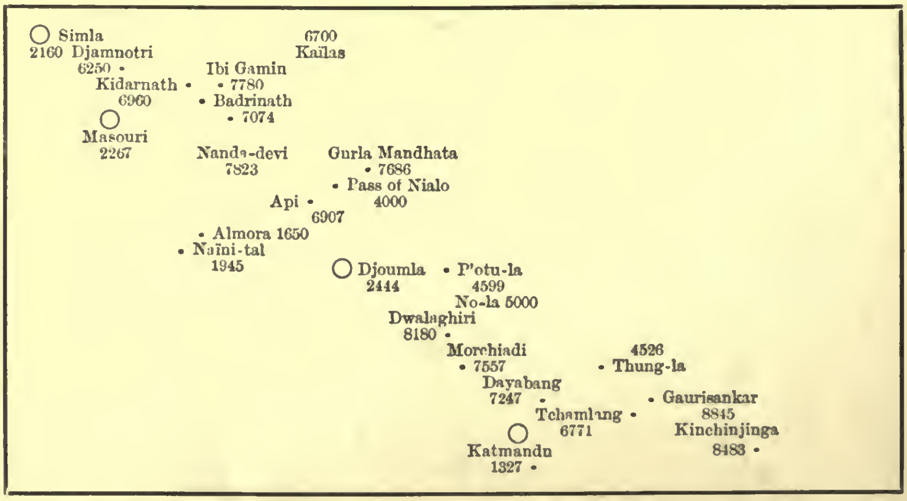
Scale 1 : 1,700,000.

60 Miles.

heights through a succession of passes over 13,000 feet above the sea. Some of the gaps in the range have even to be avoided by detours of 30 or 40 miles to the right and left. Elsewhere the track is carried through the ravines themselves, but is too formidable for any except the native hillmen. Below Choksam, where the copious river Bhotia-kosi is crossed by a bridge some 65 feet long, the path consists of 775 stone steps, from 10 to 20 inches wide, resting on iron supports sunk in the rock at a height of 1,500 feet above the foaming torrent. Even the mountain sheep or goats seldom venture to follow man across these dangerous passes.

Of the passes which might be utilised by traders between India and the plateau, a few only are opened to traffic by the Tibetan custom-house officers, who are all the more severe that the entrance of a spy or a missionary would render them liable to capital punishment. At the western extremity of the kingdom one of the most important passes is that of Nialo or Thakla-khar, which gives access to Lake Mansaraur and the water-parting between the Satlej and Tsangbo basins. This is pre-eminently the sacred region of Hindu mythology, where the mysterious animals concealed in the Kailas grottoes were supposed to discharge the four great Indian rivers. Here at all events stands Mount Gurla Mandhata, source of the Satlej Tsangbo and Karnali, while the Indus rises a little to the north of the Kailas.

The P'otu Pass, leading from the Kali-Gandak Valley to the monastery and station of Tadam on the banks of the Tsangbo, is also one of the most frequented in Nepal. Farther east access may also be had to the plateau by the more difficult No-la Pass, which rises to an altitude of over 16,000 feet. But what may be called the royal highway runs from Katmandu through the Trisul Valley by Jonka-jong northwards to the depression partly occupied by the great Tibetan Lake Pagu. Although the easiest of all, this route has hitherto been closed to the pandits employed in the work of survey by the Indian topographic bureau. But through it the Chinese penetrated in 1792 down to the interior of Nepal, and since then it has been reserved for the use of high functionaries and their suites. Ordinary traffic follows the formidable gorges of the Bhotia-kosi and the Thung-la, Kuti or Nilam-jong Pass to Tibet. Still farther east the Ganges and Tsangbo basins are connected by several other passes, such as the Hatia, Tipta, Nila, Tinki, and Dango-la. The altitudes and respective positions of the chief mountains and passes in the Central Himalayas are contained in the subjoined table:—



Of the Nepalese river basins the most extensive is that of the Arun (Aran), the main branch of the Sapt Kosiki, or "Seven Kosi." The Dingri-chu and Tinki-jong, two copious streams rising in the depression between the Himalaya and Trans-Himalaya, after flowing in separate beds for 120 miles, and receiving the

drainage of Gaurisankar and Kinchinjinga, plunge in a united stream into profound gorges 20,000 feet below the hills skirting their right and left banks. Beyond this point their waters are mingled with those of the Kosi and Tamru or Tambur. Formerly these torrents were collected in a large lacustrine basin lying parallel with the Himalaya and outer ridge. But this lake of the Seven Kosiki escaped through its emissary to the plains apparently in prehistoric times, although traditions of its desiccation survive in the Aryan legends. The Sapt Gandaki, or "Seven Gandaks," also at one time filled a vast reservoir before piercing the outer chain of sub-Himalayan hills. An inspection of this basin, and of so many other *tars* occurring in the Nepal river valleys, at once reveals their lacustrine origin. But nearly all of these reservoirs have been emptied, and with the exception of the Pakra lakes in the Sweta-Gandak basin, nothing now remains beyond a few ponds, and here and there some marshy tracts near the terai. Till they emerge from the highlands, the current of all the Nepal rivers is too swift to be navigated, hence they are utilised only for irrigation and floating down lumber.

The population of Nepal, very sparse in the upland valleys near the Tibetan frontier, increases in density towards the southern openings of the river basins, and again suddenly diminishes as we approach the terai. Pent up in their mountain homes, the natives have brought under cultivation not only the level tracts and gentle slopes skirting the valleys, but have also reclaimed the steeper inclines by means of artificial terraces. The escarpments of Central Nepal have in this way been transformed to a succession of gigantic steps, each of which bears a crop of corn. The lower slopes and plains are overgrown with dense thickets of fruit-trees, enveloping the villages with their foliage and fragrance. All the central zone of the mountains is covered with forests, chiefly of conifers. In Nepal the English might find hundreds of favourable sites for the establishment of such health resorts as those of Garhwal and Kumaon. They would, however, be cut off from the Gangetic plains by the most dangerous region of the terai, where the population is decimated by fever, and where thousands are affected by goitre. The hillmen also suffer from this complaint, which is by Hooker attributed to the general habit of carrying burdens by means of a strap across the forehead, throwing the weight on the muscles of the neck. The pack-sheep and goats, whose loads are disposed in a similar manner, are also subject to goitre.

Inhabitants of Nepal—The Gurkhas, Newari and Chepangs.

In Nepal there is still a great variety of races. Except in seaport towns, it would be difficult anywhere to find more varied ethnical elements than in this region. West of the river Gandak the predominant people are the Aryan Hindus. As in Kumaon, Rajput invaders overran the country, according to the traditions, about the fourteenth century. These were followed by other immigrants from the south, especially Brahmans flying from Moslem fanaticism, and by these the primitive population has been slowly modified. Here the Hindu conquerors held their ground against all comers, and the Nepalese are now the only inhabitants of

India who have never accepted a Mussulman dynasty. Those of the western provinces bear Hindu names, and speak idioms allied to the common Sanskrit family. They also consider themselves as belonging to the two higher castes of Brahmans and Kshatryas. But they are really a very mixed people, and many of the Nepalese Rajputs are distinguished by their Tibetan features. The existence of such a large number of Brahmans and Kshatryas in the Karnali and Sapt Gandaki Valleys is due to the regulation according to which the children follow the caste of the father in Nepal, whereas in India proper they follow the social condition of the mother.

The language current amongst the majority of the Parbattia, or "Highlanders" of West Nepal, is from them called Parbattia, and also takes the name of Khas, from the warlike tribe using it. Even east of the Kali River, as far as the Trisuli (Trisul-ganga), it is quite as generally spoken as the dialects of Tibetan origin. It has also acquired an exceptional influence since it has become the speech of the rulers of the land. It is a clear, vigorous, concise idiom, suited to a warlike race, but little cultivated. Exclusively Aryan in its grammatical structure, it has borrowed about a fifth of its words from the aboriginal languages.

The Khas are commonly, but incorrectly, called Gurkha, a term applicable properly to all the inhabitants of whatever race occupying the district in which is situated the city of Gurkha. They allow no one to call in question their Hindu descent or their rank as pure Kshatryas. But there are other military tribes, who, while calling themselves Hindus, have far better preserved their traditions and usages. Such are the Magars (Magyars) and Gurungs, who occupy several valleys north of Gurkha draining to the Trisul-ganga. The national speech is a Tibetan dialect, although they converse in Khas with their rulers, and practise some Hindu rites. The Nepalese army is almost entirely recruited from the Gurkhas, the Magars, Gurungs, and Limbus of the eastern districts, and these warlike tribes, like the Swiss in mediæval times, also seek service abroad. They are collectively known as Gurkhas in the Anglo-Indian army, where they are both numerous and highly esteemed for their courage, endurance, and discipline.

The Limbu, Kiranti, and Yakha, who hold the eastern valleys towards the Sikkim frontier, seem to represent the Kolarian element in the Himalayas, for, according to Hodgson and Dalton, they resemble the Kols of Chota Nagpur and Orissa in their physical appearance, as well as in their customs, and to some extent their language and religion. All the other tribes of Central and East Nepal are still pure Tibetans in features, speech, usages, and religion. Most of the people in these districts are much fairer than the Hindus, with broader head and features, oblique eyes, more depressed at the base, and strong, thick-set frames. They lack both the intellectual capacity and cunning of the Hindus, and are generally noted for their mild and cheerful disposition. They are divided not into castes, like the immigrants from the plains, but into tribes, which, while resembling each other in their agricultural or pastoral habits, are distinguished by their peculiar dialects, local customs, and traditions. In Nepal, Hodgson reckons no less than twelve Tibetan languages, each spoken by a perfectly distinct tribe, which never inter-

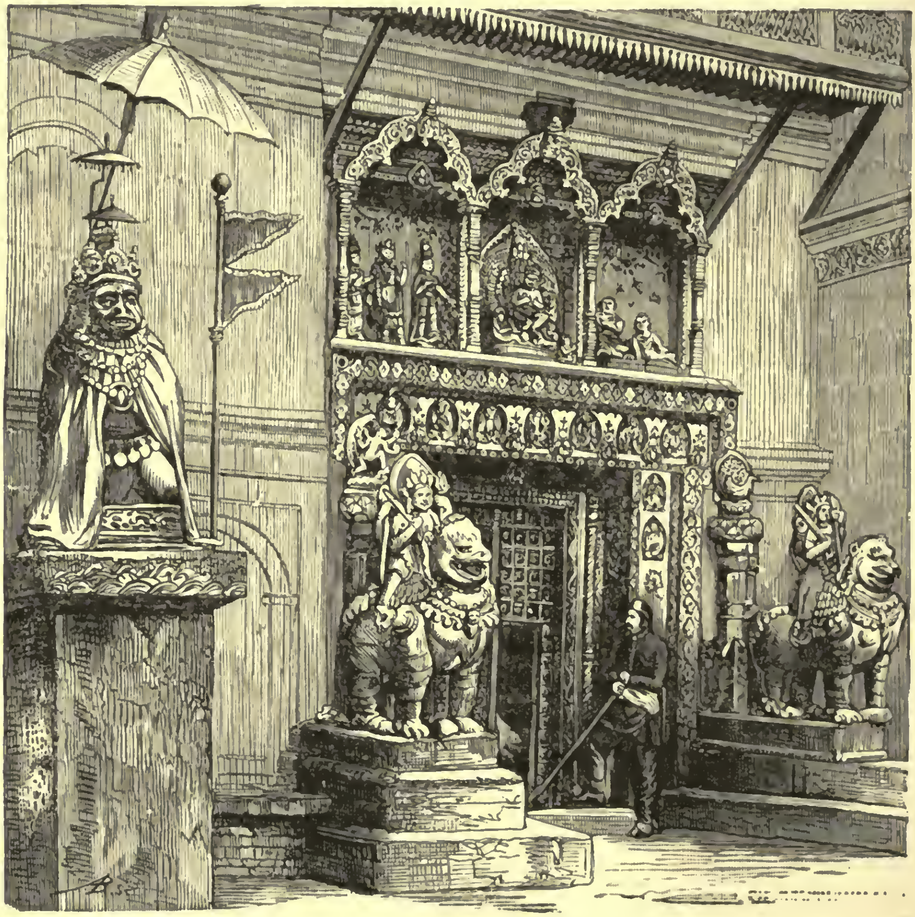
marries with any of the others. Amongst these peoples of East Nepal there are very few craftsmen, the trades being here carried on by isolated communities, differing in no respect from their masters, yet held by them in the greatest contempt. Slavery in the strict sense is also still recognised, and the father has even the power of selling his children, and thus causing them to lose both their social position and nationality.

Of the Nepalese tribes of Tibetan stock the most civilised are the Newars, who dwell in the Katmandu district on the banks of the Baghmati, between the Trisulganga and Kosi basins. The Newari is the only Tibetan dialect in Nepal which has a special character and literature, both of which are based on Sanskrit models. The Newars, far more than the Gurkhas, represent the national element between the two conflicting forces contending for supremacy in Nepal. In the south and west the Hindus have prevailed, while elsewhere the Himalayan tribes merge gradually in the rival Tibetan element. But the Newars, who hold the central plains about the capital of the kingdom, have maintained a certain originality distinguishing them both from the Hindus and Tibetans. Some traces of the matriarchal state are even said to survive amongst them, and, according to Kirkpatrick, the Newar women have the right to take as many husbands as they like, and to dismiss them on the least pretext. About the second century of the new era some Buddhist missionaries, escaping from the persecution of the Brahmans, took refuge among the Newars, whom they instructed in the sacred writings, arts, and sciences of India. Literary treasures dating from this epoch, and hitherto known only by name, have been found by Hodgson in the libraries of Nepal. Nevertheless, while adopting the Hindu culture, the Newars never forgot their mother tongue, into which they admitted only such Aryan terms as were needed to express new ideas. The adopted religion was also gradually modified. About two-thirds of the Newars are still nominally Buddhists; but while the neighbouring tribes on the east and north have lamas, as in Tibet, the Nepalese proper have no monasteries, and admit certain Hindu divinities and symbols in their temples. They have even accepted the caste system, their "Banhra" answering to the Brahmans of India. They have also their trading and artisan castes, but no Kshatryas, and in case of caste disputes the decision lies, not with the Tibetan Dalai lamas, but with the raj guru, or high-priest of the Brahmans. Altogether Buddhism is dying out in Nepal, and in a hundred years, says Oldfield, it will have disappeared from the Katmandu Valley, as it has from India. The very architecture of the two thousand temples or shrines erected in this district attests the struggle going on between the rival northern and southern influences. The mixture of the two styles has, however, been effected with a certain originality, the carved ornaments recalling those of the Hindu temples, while the Chinese taste is represented in the employment of wood, in the projection of the upper storeys, and other structural features.

A marked contrast to the civilised communities is presented by the Chepangs and Kusundas of the wooded uplands west of Katmandu, who, according to Hodgson, have been debased by conquest. They have, at all events, maintained

their independence, paying no tribute, and refusing military service. Like their Majhi and Kumbar neighbours, they live on wild fruits and the produce of the chase, and build themselves huts of branches loosely interlaced. Other less savage tribes occupy the terai, where they are collectively known as "Awlia," from their indifference to the "awal," or malaria, of that hot and marshy region, so fatal to the surrounding Hindu and Tibetan peoples. For an unknown number of generations they have here resided, cultivating the clearings and hunting the wild

Fig. 46.—Katmandu—Hanuman Gate of the Royal Palace.



elephant. But this animal has become so rare, that they are no longer able to pay the tribute of five hundred till recently exacted of them by the Nepal Government.

The tribes of Lower Nepal have all been assimilated in speech to the Khas, and even call themselves Hindus, although they do not practise Brahmanical rites. Amongst the Denwars the priestly office is discharged by the sons-in-law and the sister's sons. In many respects these communities seem to form an ethnical transition between the Kolarians of Central India and the Tibetans of the

KATMANDU—TEMPLES FACING THE ROYAL PALACE.

Himalayas. In the terai districts bordering on the British possessions the predominant tribes are the Tharu and Mech, who call themselves Bodo or Boro, and who must be affiliated to the Bodo or Kachari nomads scattered over north-east India as far as the Burman frontiers. Wherever they come in contact with the Hindus they become rapidly assimilated, and have already adopted the worship of Siva, modified by local superstitions. They sell their daughters in marriage to their neighbours, and thus grow rich, the Mech women having a reputation for beauty.

Topography and Trade of Nepal.

Katmandu, capital of the kingdom, and the chief place in the valley which has given its name to the whole of Nepal, stands at an elevation of 4,300 feet above the sea at the confluence of the Vishnumati and Baghmati, whose united waters flow directly to the plains of India. The town straggles irregularly along the river banks, the winding streets are often blocked by heaps of rubbish, and most of the red brick houses are little better than sinks. Many of these houses have two or three storeys, communicating not by stairs but by trap-doors. The darbar, or royal palace, consists of low buildings irregularly grouped, and approached by porticoes covered with fantastic carvings. So numerous are the pagodas, that from a distance the place seems like one vast temple, adorned with glittering roofs, or gilt bronze domes and belfries. Everywhere are seen these little shrines smeared with the blood of animals offered in sacrifice to the gods, while here and there rise huge monoliths, surmounted by the statues of princes or divinities guarded by formidable-looking bronze snakes.

Three miles east of the capital stands *Baddhnath*, the largest Buddhist temple in Nepal, forming a vast cupola, surmounted by a tower, on which is painted the figure of a god, and by a pyramid with steps terminating in a sort of tiara. This temple is kept in good repair by the Tibetan lamas, who visit Nepal every winter.

Numerous towns, villages, and temples, often embowered in the rich foliage, are scattered over the surrounding plain, which stretches some 12 miles north and south, and which is everywhere encircled by hills rising from 1,000 to 8,000 feet above the old lacustrine basin. One of the most delightful spots in this romantic region is occupied by the villa of the British Resident, which commands a fine view of the whole country. A grand prospect is also obtained from the summit of the elegant Darera column, which rises to a height of 240 feet above the ground. According to Oldfield, the population of the Katmandu Valley has risen from 186,000 to about 250,000 since the beginning of the present century. Its fruits, flowers, and vegetables are unsurpassed in the whole of Asia.

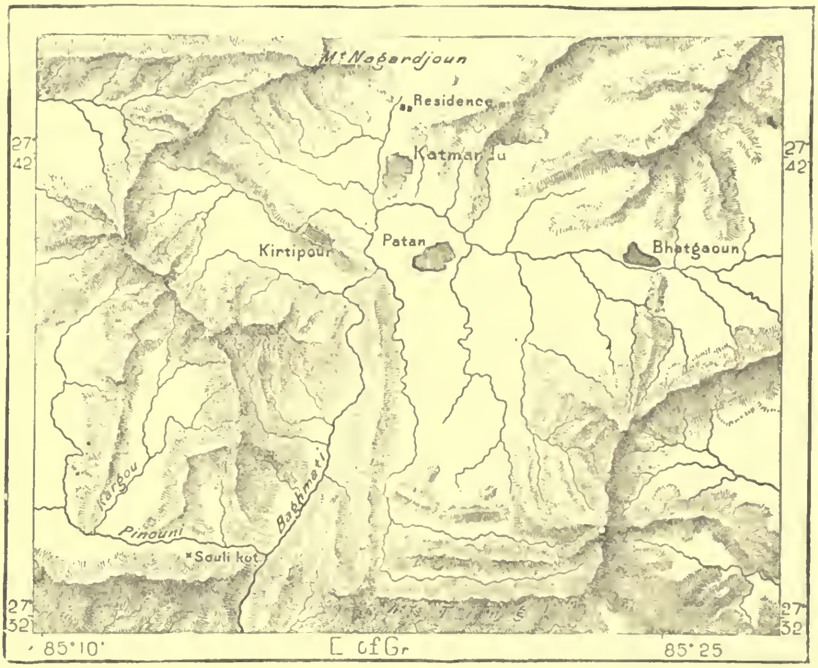
The cities of *Patan*, two miles south-east of Katmandu, and *Bhatgaun* (*Bhatgnoy*), 8 miles farther east, are still more richly endowed with temples of every epoch subsequent to the introduction of the Hindu religions. But most of these buildings are in a very dilapidated state, and often overgrown with rank vegetation. At the date of the foundation of Katmandu in the eighth century of the new era, Patan was already a considerable place, and is still the second city in the kingdom. Both

here and in the capital the Newars form the majority of the population, while the Brahmans are centred chiefly in Bhatgaun. *Kirtipur*, another city, now almost in ruins, crowns a small hill west of the valley, where, over a hundred years ago, it formed the bulwark of the Newar national independence. When at last taken by treason, the Gurkhas, in revenge for their long resistance, slit the nose and lips of all the inhabitants, sparing only infants at the breast; and from this circumstance Kirtipur was long known by the name of Nascatpur, or "Slit-nose-town."

Nayakot (*Naokot*) occupies a crater-like depression north-west of Katmandu, near the confluence of the Trisul-ganga with one of its tributaries. This town was formerly the winter residence of the Nepalese rajas, but the palace is now

Fig. 47.—The Katmandu Basin

Scale 1 : 300.000.



6 Miles.

abandoned, and Nayakot has lost much of its commercial importance. Nevertheless, a yearly fair is still held in the neighbourhood, which is noted for the excellence of its rice, sugar, pine-apples, mangoes, and other produce. The oranges of Nayakot and the western districts round about Gurkha are considered to be unrivalled. Nayakot marks the extreme point to which the Chinese and Tibetans penetrated during their victorious campaign against the Gurkhas in 1792.

There are no large towns in the western division of Nepal, which is bounded by the Trisul-ganga, and which was formerly divided into forty-six petty feudal principalities—the Baïsi raj, or "Twenty-two kingdoms," and the Chaubisia raj, or "Twenty-four kingdoms." Here the chief centres of population are such walled

villages as *Jamla* (*Jumla*), capital of the Baïsi raj, such market-places as *Lohmantang* (Oldfield's *Mastang*), on the path leading up to the P'otu-la Pass, and such popular places of pilgrimage as *Muktinath*. Towards the Tibetan frontier the most commercial town is *Kirong*, situated to the north of Katmandu, at an altitude of 9,000 feet above the sea, in a valley which is overlooked towards the west by the Gosainthan Mountains. At this elevation wheat and barley still flourish, but rice has to be imported from the plains.

The trade of Nepal is greatly hampered by the vexatious custom-house arrangements. Dues are levied not only on the frontiers, but also at several inland stations, while some articles are prohibited altogether. The state thus seeks to defend itself against its powerful neighbours by a system of exclusiveness, which however does not prevent foreign traders from entering the country. The Tibetans come to buy opium, which they smuggle across the border, and hundreds of Hindus attend the annual fairs of Katmandu. The English wares, which become from year to year more indispensable to the natives, are paid for by local produce, such as timber, cateshu or cashu gum, iron, copper, wool, horses (a small patient and hardy breed), besides salt, gold dust, turquoises, borax, and various ores imported from Tibet. Nepal is even able to export to India some of its own manufactures, notably rugs, and a kind of paper, strong as parchment, made of the fibre of the *daphne cannabina*. In spite of its exclusive policy the government is thus unable to prevent its subjects from entering into constantly increasing relations with their Indian neighbours. It is obliged to keep the already existing roads in repair and open others, and it has even proposed to the Brahmans the establishment of stations along the main routes. Meanwhile the highway leading from Katmandu to *Siganli*, the frontier railway station, is a mere track traversing a wide belt of the terai and crossing the Sisaghari and Chandragiri Passes at the respective elevations of 6,350 and 7,100 feet above the sea.

The Nepalese emigrate in large numbers to the plains, and especially to Benares, whence they return with new ideas and new habits, which are gradually assimilating the country to the rest of India. The majority of the rich landed proprietors of the terai districts even reside permanently on British territory.

At the same time the political independence of Nepal is in no way threatened. On the contrary, the Katmandu Government is treated with every courtesy and consideration by the viceroys of India, who have even consented to keep Nepalese state prisoners under arrest in the fortress of Chanar, on the Ganges. The raja has at his command an army of 100,000 men noted for their courage, and to a large extent armed with European weapons, besides being supplied with excellent war materials. Hence, while valuable as an ally, he might prove himself a formidable enemy.

CHAPTER V.

THE EASTERN HIMALAYAS.

Upper Valleys of the Brahmaputra Affluents—Sikkim and Bhutan.

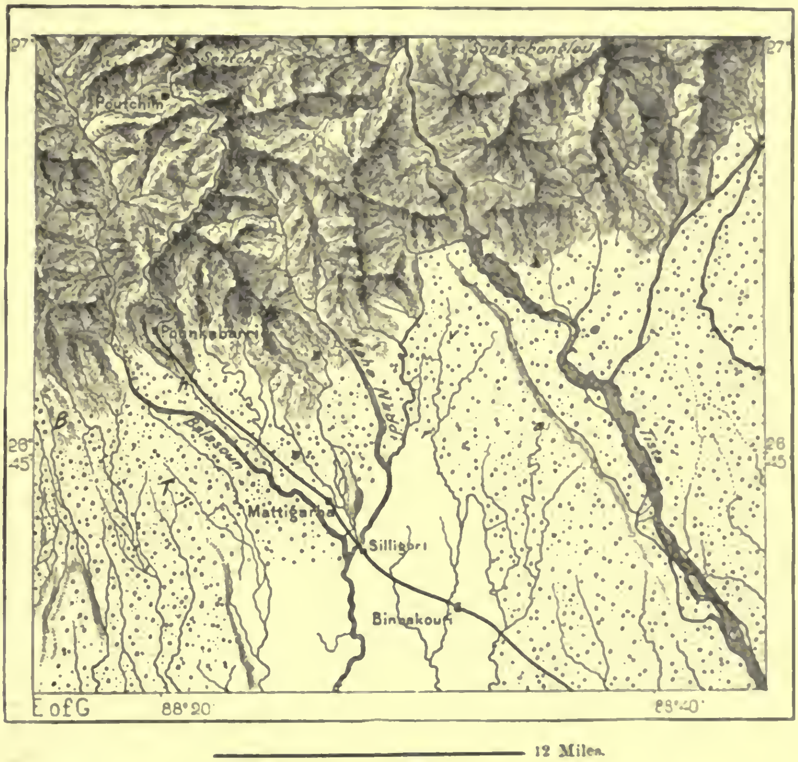
NOTWITHSTANDING its proximity to Calcutta and to large navigable rivers, the eastern still remains less known than the other sections of the Himalayas. Many valleys inhabited by savage tribes have not yet been explored, and the rivers traversing them are not even known by name. A few summits only, visible at distances of 80 or 90 miles from the plains, have been measured, and may serve as the first fixed points of more detailed surveys. The chief cause of the prevailing ignorance respecting this region is certainly the excessive rainfall produced by the southern monsoon. Thanks to this superabundant moisture, torrents, which would elsewhere be mere rivulets, acquire the proportion of large rivers, while a rank vegetation of dense thickets, matted together with twining plants, everywhere presents the greatest obstacles to explorers. The infiltration of the surface waters also causes frequent landslips, and the least depression becomes converted into a dangerous quagmire. Thus the forces of nature have hitherto remained too powerful to be controlled by civilised man, and the land is still mainly occupied by rude hill tribes, capable of adapting themselves to all the conditions of the environment, and indifferent to the wants or comforts of the more civilised peoples of the plains. The fear inspired by these fierce hillmen has also naturally contributed not a little to repel strangers from visiting their rugged upland valleys.

Nevertheless a portion of the Himalayan slopes draining to the Brahmaputra has already been indirectly annexed to the Indian Empire, and the limits of the tributary state of Sikkim have even been extended to the Trans-Himalayan range. The upper basin of the Arun River, the most important in Nepal, is marked on several maps as belonging to the English, although, being totally uninhabited, it has really no owners. Between the two states of Nepal and Bhutan British military and trading stations have been established, and farther east, without actually conquering Bhutan, the English have also annexed the eighteen *doars* which naturally depend on British India. These "gates" of the Himalayas are the only parts of the country possessing any important products or large centres of popula-

tion. To secure the tranquillity of the frontier, the British Government allows the Raja of Bhutan an annual subsidy, the punctual payment of which depends on the conduct of the pensionary.

Eastwards Bhutan is bounded by the Tovang country, the commercial route through which has become Tibetan property, thanks to the influence of the lamas, at once priests, political agents, and traders. But here also the English have occupied the doars skirting the plains, so that at this point the British and Chinese Empires are now conterminous. Farther east begins the unexplored domain of the wild tribes, who have been pensioned by the Government on condition of abstaining

Fig. 48.—Bifurcation of the Tista and Maha Naddi.
Scale 1 : 500,000.



from plundering the Assam tea plantations, which are continually creeping higher up the mountain valleys.

A rough estimate only can be formed of the total population of the Himalayan slopes between Kinchinjinga and the eastern highlands. But judging from what is known of the western districts, it can scarcely exceed half a million.

Hydrography and Climate of Sikkim.

The river Tista, or Trisrota, that is, the "Three Springs," whose upper basin comprises the region known as Sikkim, might to a certain extent be regarded as the main branch of the whole Gangetic system; for it flows directly south towards the Bay of Bengal along the line of most rapid drainage, whereas the Ganges and

Brahmaputra, which approach each other from opposite directions, run parallel with the Himalayas, only taking a southerly direction on reaching the plains that have been already levelled by the Tista. During the historic period the Tista has continually oscillated between these great streams, shifting its course more frequently than most other rivers. Even still one of its branches joins the Maha Naddi, a tributary of the Ganges, which retains the name of the "Great River," from its former copiousness. The Kosi also, now a Ganges affluent, is traditionally supposed to have at one time flowed south-east to the Brahmaputra. In this vast alluvial

Fig. 49.—Sikkim.

Scale 1 : 1,500,000

30 Miles.

plain all the streams tend to change their beds, the new continually effacing the old windings.

The basin of the Upper Tista is sharply limited by an amphitheatre of lofty mountains. Eastwards rises the imposing mass of Kinchinjinga, which is continued southwards by the Kubra and other summits separated by a deep fissure from the Singalila range on the Nepal frontier. Here all the passes connecting the two regions have an altitude of at least 8,500 feet. North-east of Kinchinjinga (the Lambutsinga of Jules Remy) stretch the Himalayas proper, with the Chomiomo, Kinchinjhan, Donkiah, and other peaks, enclosing snowy cirques and

small lacustrine basins, where the farthest head-streams of the Tista have their source. Although less elevated than Kinchinjinga, the Donkiah is broader, and forms a more important mass in the whole system. It is connected by a cross ridge with the Trans-Himalaya, and by a lofty range eastwards with Chamalari, whose sharp peak exceeds it in altitude. South of the Donkiah another chain, higher than Singalilah, and commanded by the Gnariam, Chola, Gipmochi, and other peaks, separates Sikkim from a long strip of Tibetan territory, which here penetrates to the southern area of drainage. The long rectangle formed by the Upper Tista basin is confined on the south by advanced ridges falling gradually in height towards the plains, but still maintaining elevations of 6,000 to 8,000 feet. Here the Tista escapes through the narrow Sivok-gola gorge southwards. Within the great circuit of highlands comprising Sikkim and the English district of Darjiling, secondary ridges branching off in all directions from the outer ranges form a vast labyrinth, in which it is difficult to determine the original disposition of the hills running east and west parallel with the Himalayan axis.

Explorers are prevented by the excessive moisture of the climate, the frequent rains and fogs, from venturing far from Darjiling towards the Kinchinjinga and Kinchinjao crests. During the summer monsoon it rains almost incessantly, and even in winter the prevailing north-easterly dry winds are counteracted by a moist under-current sweeping up from the Bay of Bengal towards the Sikkim valleys. After the rains, dense vapours seem to roll up like volumes of smoke from the forests. The firmament is now frequently overcast with dense fogs several thousand yards thick, through which the landscape seems to be lit up by pale lunar rather than by solar rays. The hills assume a weird, spectral aspect, and appear all the loftier the farther they seem removed in the watery atmosphere. In this moist climate, with an almost uniform temperature throughout the year, the wind seldom blows hard even on the mountain tops. But when the clouds are scattered, revealing the mountains standing out against a blue sky, the surrounding currents are attracted to local centres of heat, and then from the lower valleys the snows may be seen rising in flaky wreaths above the highest summits.

Vegetation and Inhabitants of Sikkim.

Such a humid region is naturally but sparsely peopled. Even walking is difficult, owing to the clayey nature of the rocks, which dissolve to a clammy mud, and during the rainy season there is no escape from the myriads of little threadlike leeches, which swarm on the foliage of the forests up to an elevation of 10,000 feet. The narrow valleys of the Tista and its affluents are exposed to such sudden freshets, that no human dwellings can here be erected. Hence the best sites for villages are the hill-tops, whence the water flows away in all directions. The luxuriant vegetation, which grows with surprising rapidity during the rains and fogs, also presents a great obstacle to field operations, often stifling the cultivated plants, which mostly need long intervals of fine weather. The tropical flora rises

to a greater altitude on the Sikkim mountains than in any other region under the same latitude. On the slopes facing southwards palms and bananas still flourish at an elevation of 7,000 feet above the sea. In the Darjiling forests the plants of the torrid are intermingled with those of the temperate zone, the walnut growing by the side of the palm, the rhododendron associating with the tree-fern, parasitic orchids springing from the wide-branching oak. Ferns especially are richly represented in this region, where Hooker counted as many as thirty species on a single mountain south-east of Darjiling.

Above the belt, where the two zones intermingle, rises the great forest of leafy trees, conspicuous amongst which are the oak, magnolia, chestnut, and walnut. But edible fruits are extremely scarce, the excessive rains preventing the apple, pear, or peach from arriving at full maturity. The upper slopes are occupied mainly by conifers, above which a few willows are still seen at an altitude equal to that of Mount Blanc. A little lower down all the torrents are fringed with thickets of the rhododendron, one of the characteristic arborescent plants of Sikkim. Dense masses of phanerogamous plants are even found on the high passes leading to Tibet. Over two hundred species were collected by Hooker on the Kangra-lama Pass (15,550 feet), west of Kinchinjao, and on the Bhamso (17,850) he still found as many as eighteen. Unlike those of the European Alps, these mountain plants, apparently indifferent to the cold, are unprotected by any woolly down. Beyond the crest of the water-parting begin the salt deserts of the plateau. While the forests on the southern slope reach almost to the snow-line, the opposite side presents nothing but rugged bare rocks of a blue or reddish hue. Yet this desolate region is frequented by large herds of ruminating animals, attracted by the saline tracts.

The inhabitants of Sikkim are almost exclusively of Tibetan stock. The Lepchas, who are the most numerous tribe, differ from their northern kinsmen only in their less sallow or more florid complexion, which is due to the humid climate. Compared with the reserved, wily, and obsequious Hindus, the light-hearted and confiding Lepchas seem to the English the pleasantest of fellow-travellers. Their favourite instrument is the flute, which they play with great sweetness and grace. Unlike those of India, their language is absolutely destitute of abusive terms. The dialects of the various Sikkim tribes, although presenting considerable variety, all belong to the common Tibetan stock. In religion and national usages the people also resemble the Bods of the Tsangbo Valley. As in Tibet, the sacred formula *Om mani padmi hum* echoes from every village, and is inscribed on the rocks by the wayside.

Some of the finest sites in the country are occupied by about twenty lamaseries, where young men escaping from the oppression of the rajas enter the priesthood, to enjoy a peaceful life without being burdened with taxes. About 800 persons reside in these refuges, one of the most famous of which is that of *Pemiongchi*, situated at an altitude of 7,000 feet on a terrace, where formerly stood one of the capitals of Sikkim. *Tamlung*, the present residence of the raja, lies in the eastern division of the country, on a bluff 5,400 feet high, overlooking a tributary of the

Tista. This place is partly abandoned during the rainy season, when the raja retires with his Court to the Tibetan Valley of Chumbi, which is sheltered from the rains by an intervening mountain range.

Topography—Darjiling.

Darjiling, the chief town of the English portion of Sikkim, has acquired exceptional importance as the temporary capital of the province of Lower Bengal. Founded in 1835, when this territory was ceded to the Company, Darjiling, that is,

Fig. 50.—Darjiling.

Scale 1 : 295,000.

the "Holy Place," stands on the narrow ridge of a crescent-shaped mountain about 7,000 feet above the sea, at a point commanding a view of the gorge, through which the Great Ranjit escapes to the Tista. Like all the other health-resorts in the Himalayas, it is flanked by barracks and batteries, but otherwise presents the appearance of a group of palaces and villas. Compared with Simla and the other

English settlements in the hills, it has the great disadvantage of an excessively moist climate. But during the morning hours, before the clouds have banked up to discharge their daily rains, Darjiling often presents a marvellous panoramic view of the Himalayas, from Gaurisankar, seen in the hazy distance, to the majestic Donkiah and Chamalari peaks. In the centre rise the twin crests of Kinchinjinga, always capped in clear weather by fleecy clouds scudding eastwards under the influence of the prevailing upper currents. Towards the south are seen the wooded slopes of Senchal, stretching away above the vapoury plains of the Ganges.

Centre of the British rule in the Himalayas, and occupying a remarkable position at the summit of the parting angle between the Ganges and Brahmaputra affluents, Darjiling could not fail to become a busy emporium of the trade between India and Tibet. From Sikkim it receives large supplies of lumber, floated down by the mountain torrents, from Tibet wools and horns, from Nepal live stock, in exchange for English goods. But so jealously are the Tibetan frontiers guarded, that none of the tea produced since 1856 on the Darjiling plantations has yet found its way to Lassa.* Cinchona was also recently introduced, and the planters have even endeavoured to cultivate ipecacuanha and cardamoms in the neighbouring forests. Other sources of future wealth are the coal, iron, and copper mines of the district, which has already been connected with the Indian railway system. Numerous roads also traverse the tea and cinchona plantations, winding along the flanks of the hills and terminating at present at the villages of Sikkim. The Hungarian traveller, Csoma de Körös, who has contributed so much to a better knowledge of the Tibetan language, lies buried in Darjiling.

Like Simla, Darjiling possesses its "great route to Tibet." The road descends eastwards to the Tista Valley, crosses the river by a handsome suspension bridge, and ascends north-eastwards to the Jyelap Pass, north of the Gipmochi peak. This comparatively easy pass leads over the Chola range, at a height of 12,860 feet, down to the Tibetan Valley of Chumbi, which, like Sikkim, belongs to the southern drainage of the Himalayas. It affords one of the best means of access to Tibet, and was followed in the last century by Bogle, Turner, and Manning, the English envoys to the Court of Lassa.

Bhutan.

Since the cession of the eighteen southern doars to England, Bhutan, or rather Bhut-ant—that is, the end of the Bhut, or Bod country—consists only of some narrow upland valleys separated by intervening lofty ridges, which are crossed by difficult tracks. The western valley of the Tursa, bounded on the north by Chumbi, is almost completely isolated from the rest of Bhutan, to which it belongs politically only through the condescension of the English. The first genuine Bhutanese valley is that of the Chin-chu, which rises on the slopes of Chamalari. The Sankos, flowing parallel with the Chin-chu, is also fed by the snows of the Himalaya. One of the peaks in this still imperfectly explored section of the main range exceeds

* Darjiling tea plantations (1875), 121; yearly yield, 5,000,000 lb. Exports to Sikkim (1877), £14,160; imports from Sikkim, £80,260; total exchanges, £94,420.

BHUTIA OR BHUTANESE TYPES AND COSTUMES.

Chamalari itself in altitude. But farther east the Himalayan barrier is pierced, as in so many other places, by the gorge of the river Manas, which flows from the broad depression separating the two chief ranges of the Himalayan system.

The Bhutia, or Bhutanese, belong to the Tibetan family, and their national name is derived from the same root as that of the Bod and of the Kumaon and Nepalese Bhotia. They are also collectively known by the general name of Lo. They are a small but robust people, and but for the prevalence of goitre amongst them, they might even be regarded as one of the fine races of the peninsula. Unfortunately, they appear to suffer much from the oppression of the native government. They own no property, and their lot depends entirely on the caprice of the nobles and monks, who administer the country. The English envoys who visited Bhutan describe their condition as extremely wretched. The State inherits all their possessions, and of the crops they retain only sufficient to keep them from absolute starvation. All the rest goes to the governors, who receive no direct salary. In order to escape from this dire oppression, thousands of Bhutanese emigrate yearly to the imperial domain, and especially to British Sikkim. Here they are regarded as much inferior to the Lepchas in cheerfulness, honesty, and love of work.

Under such a régime it is not surprising that the country has become impoverished. Trade, which is a state monopoly, has remained stagnant, or even diminished, the exchanges with India having fallen in 1877 to less than £32,000. Yet Bhutan has great natural resources, and possesses an excellent breed of hardy little ponies. When free from spoliation the people are industrious enough. They carefully cultivate the terraced lands on the slopes of the hills, weave substantial fabrics, manufacture artistic objects in iron and copper, make paper and even a kind of satin from the bark of the *diah* (*daphne papyrifera*), carve wood with taste, and erect spacious and convenient dwellings, not unlike the Swiss châlets. Several of the towns possess rich pagodas in the Chinese style of architecture, and a chain bridge crossing the Chin-chu at Chuka seemed to Turner an admirable piece of workmanship. It was unequalled in Europe for many years after his time, and this monument is attributed by the natives themselves to the hand of a god.

The government is modelled on that of Tibet, except that the Chinese ministers, supreme at Lassa, have not yet made their appearance in Bhutan. The titular sovereign, who is a sort of grand lama, has received the name of *Choigyal* (in Sanskrit *Dharmaraja*); that is, "King of the Law." At the death of this buddha the council of *lenchen*, or ministers, seeks for a child in whom the deity has condescended to become incarnate, and generally finds him in the family of one of the native magnates. By the side of the spiritual sovereign there reigns another raja, the *deb*, who is also appointed by the ministerial council, or rather by the faction for the time being in the ascendant. Strictly speaking, the authority of the deb lasts three years only, but he can always keep his seat on the throne as long as he enjoys the favour of the nobles. The two chief provincial governors, or *penlo*, are those of West and East Bhutan, who reside in the towns of Paro and Tongso, respectively.

Tasisudon (*Tasicho song*), capital of Bhutan, lies in a mountain cirque on the

banks of the Chin-chu. But *Panakha*, or *Punakha*, the winter residence of the temporal raja, is situated in a much lower valley to the east, but still in the heart of the mountains. The palace is surrounded by mango and orange groves, and, but for the proximity of the snowy ranges on the north, one might fancy oneself on the plains of Bengal. *Paro* lies in another valley west of Tasisudon, and *Tongso*, capital of the eastern province, is a mere hamlet, which communicates with the plains of Assam by the difficult Rudu Pass, 11,920 feet high.

The rule of the Dharmaraja is limited eastwards by the Manas basin, and even some eastern tributaries of this river lie beyond his jurisdiction. Between his official domain and the independent tribes of the Eastern Himalayas there intervenes the territory of the raja lamas, or "priest kings," who call themselves vassals of the dalai lama, but who are practically independent, thanks to the great distance and difficulty of communicating with Lassa across the Himalayan ranges. They even occasionally make war on each other, changing the limits of their possessions according to the decision of the sword, without consulting their suzerain. But notwithstanding these rivalries, the country of the Khanpo Bhot possesses some importance as a commercial highway between Tibet and Assam. The whole eastern zone of the Himalayas being blocked by fierce wild tribes, the caravans are compelled to follow this route through the town of *Tovang*. North of this mart, which lies at an altitude of 10,150 feet, nearly the whole country depends on the Tibetan monastery of Chona-jong, whereas the southern valleys as far as the British frontier belong to the lamas of Tovang. Some even of the districts now included in the imperial domain were formerly under the rule of the lamas. By order of the *Keto*, or Supreme Council of the Monastery, the Tibetan caravans are now obliged to stop at *Chona-jong*, where the transit dues are paid. This route to Tibet, which skirts the shores of several large lakes, is carried over passes from 13,000 to 16,500 feet high.

The British military station of *Devangiri* lies at an altitude of 1,460 feet, on an advanced spur of Mount Tasgong (13,600 feet), whence it overawes both the Khanpo Bhots and the inhabitants of East Bhutan. Here is yearly held one of the largest fairs in Assam. At the other extremity of Bhutan the Western Bhutias are in the same way held in check by the ancient fortress of *Buxa*, erected on an artificially levelled rocky platform. The question of directing a stream of European immigration to the slopes of the doars near these forts has often been discussed, but no attempt has yet been made to carry out any of these projects. In the region of the terai, bordering on these doars, extensive tracts belonged formerly to different masters, according to the seasons. During the summer heats they were occupied by the Assamese and Mech tribes, and for the rest of the year by the Bhutanese.

AKHA, ABOR, AND MISHMI HIGHLANDS.

East of the petty frontier states governed by the Buddhist monks the country is distributed amongst various hill tribes, who have hitherto kept off both the

Chinese, Hindus, and English, but who have ceased to make marauding expeditions to the Brahmaputra riverain districts, through fear of losing the subsidies granted them by the British Government. The western part of this territory is occupied by the Akha, who call themselves Hrusso, and who number about 100,000 souls. One of their clans has accepted from the Assamese Government a grant of lands on the plains, where their ancient fetish practices are gradually being replaced by Hindu rites. Although stock-breeding was till recently their only industry, the Akhas, like most of the Indian wild tribes, abstain from drinking milk, which

Fig. 51.—The Dapla Territory.

Scale 1 : 1,400,000.

they hold in abhorrence. According to Hesselmeyer, their speech resembles that of the Shans and natives of Manipur, whence they are supposed to have migrated to their present homes. North of the Akhas the valleys are occupied by the Miji, of whom little is known beyond their name. Farther east dwell the various tribes collectively known to the lowlanders as Dapla, or Daffla, but who call themselves Banghni—that is, "Men." They were formerly the most dreaded of all the marauding tribes, but they are divided into such a multiplicity of clans, that they have been unable to present a united front to the encroachments of the planters,

supported by British troops. In 1872 no less than two hundred and fifty-eight independent chiefs were in receipt of government grants, in exchange for the immemorial right of pillage claimed by them, but these yearly grants scarcely amounted to more than a pound sterling per head. Like the Akhas, the Doplas now supply a continually increasing number of hands to the Assamese planters, and are thus being gradually brought under the influence of their Hindu neighbours. As in Tibet, every form of marriage is practised—polyandry by the poor, polygamy chiefly by the rich.

The Padam, or Pagdam, known to the Assamese by the general name of Abor or Abar—that is, "Savages"—occupy jointly with the Miri the valleys watered by the Dihong and Dibong, in the Eastern Himalayas. Belonging to the same Tibetan group as the Akhas and Daplas, and speaking similar languages, they have better preserved their independence, although still accepting from their powerful neighbours annual subsidies, as pledges of their submission. In their vicinity dwell the Miri, or "Middlemen," so called because they are employed in the transit trade between the peoples of the plains and highlands. The Padam call themselves the elder brothers of the Miri, and consider themselves specially privileged amongst all the surrounding tribes. They recognise no political masters, and all male adults take part by right in the communal assembly, which meets every evening to discuss all matters of general tribal interest. Voluntary submission to the decrees of these meetings is absolute. After the gathering young men traverse the village, proclaiming the programme for the next day, and to this all conform, whatever be its tenor. On grand occasions delegates are appointed to meet in the village of Bor-Abor, but even then the decisions are valid only after being ratified by the communes. The villages are kept very clean, the roads are lined with fruit-trees, the rivers are crossed by good and tasteful ratan bridges, and the cultivated lands might serve as models for those of the Assamese planters. The Abor priests are not hereditary, but chosen amongst the elders whose predictions have been most frequently confirmed by the event, and who have been most successful in curing the sick. The Padam practise tattooing, the cross being the chief ornament, with which they mark the forehead or nose. The women also wear necklaces, bracelets, and heavy iron pendants, which, after extending the lobe of the ear, rest upon the shoulders. From Tibet come these objects, as well as the breastplates for the men, and their metal helmets, embellished with the beak of a bird or a boar's tusk.

The less explored upland region about the sources of the Dibong and Brahmakund is inhabited by the Mishmis, whom Dalton affiliates to the Chinese Miaotze, and one of whose tribes bears a most surprising resemblance in physique to the lower classes in the central parts of the main island in Japan.* Those with whom the English have relations are skilful traders, bringing to the Assamese markets musk, aconite, various drugs, and even strong cloth woven from the nettle fibre. Most of the Mishmis are of tawny complexion, with flat features, although an almost Aryan type is often met, which they themselves attribute to crossings with the Hindu pilgrims who yearly visit the Brahmakund river. Their religion is

* Leon Mechnikov, MS. notes.

little more than a system of witchcraft and conjurings, and their priests, like the Tungus shamans, understand the art of exorcising the demons and curing maladies by means of dances, contortions, and drum-beating. The Mishmis are polygamists, and their chiefs take pride in procuring numerous wives, at prices varying in a remarkable manner from one pig to twenty oxen. Next to their wives their chief riches are cattle, especially the mithun (*bos frontalis*), which lives in an almost wild state, but which never fails to answer the voice of its master when tempted by a little salt. The large Mishmi houses, each occupied by a hundred inmates or upwards, are decorated in the interior with the horns of the mithun and with the trophies of animals slain in the chase. The word "head" is employed for all objects of exchange, as in the English expression "so many head of cattle," a possible reminiscence of the old head-hunting days.

But the Mishmi tribes dwelling in the interior are known only by name, and according to the reports of the traders many years must elapse before their territory can be opened up. The country is of an extremely rugged character, and its exploration will be all the more difficult that the villages have no fixed names, being indicated by those of the various tribal chiefs.

CHAPTER VI.

Mohammedan India.

THE FIVE RIVERS.—THE INDUS AND THE DESERT.

Panjab, Derajat, Bahawalpur, West Rajputana, Sind, and Catch.

THE whole country forming a rough quadrilateral between the Kashmirian Himalaya, the Afghan and Baluch escarpments, the sea and the Rajputana Hills, is a natural region quite distinct from the rest of India. Formerly a marine inlet, as shown by the salt-water fossils collected here and there, Panjab and Sind are now watered by streams all issuing from the same snowy ranges, and all converging in one river basin. The now almost waterless district stretching from the Lower Indus eastwards to the Aravalli Hills and Mount Abu, was also at one time traversed by these streams, traces of whose old beds still survive in the numerous little winding lakes or swamps here fringed by dunes. The river Luni, which flows parallel with the Indus to the Rann of Catch, was formerly connected with the labyrinth of Himalayan watercourses.

In this sultry region agriculture and population depend entirely on the distribution of water. If a single stream runs dry or shifts its bed, whole communities are condemned to exile or to perish. Hence all the inhabitants of North-west India have been necessarily concentrated in the territory of the Five Rivers and along the Indus down to the coast. Farther east small settlements alone have been established along the canals and in the humid depressions. At most one half of the country is inhabited, and although certain parts of the Panjab are covered with towns, the population is on the whole far less dense than elsewhere in India. The Indus basin is separated by a desert from the peninsula, and the two regions are commercially and politically connected together only by the belt of cultivated lands skirting the Himalayas between the Ganges basin and Panjab. Hence the great strategic importance of this strip of territory, by which the Anglo-Indian Empire is connected with the outer region of the river basin, which gives its name to the whole peninsula. From their very geographical position, the north-west provinces traversed by the Indus have always been the vulnerable part of

Hindustan, and their political destinies have been most frequently changed. Invaders have often succeeded in penetrating into India through the breach presented by the valley of the Kophen or Kabul River, and this very route was followed by the Aryas themselves, when driven gradually eastwards by the pressure of fresh continental migrations. From the western plateaux also came the Persian, Greek, Arab, Turki, and Afghan conquerors, and in the same direction the modern inhabitants of India have their gaze still turned, asking whether the Muscovite is to be the next intruder.

Hydrography of the Panjab.

The term Panjab, in Sanskrit, Panchanada, or "Five Rivers," which has replaced the older expression, Sapta Sindhavah, or "Seven Streams," shows that within the historic period the hydrography of the north-western plains has undergone a change. Rivers have been dried up, or "lost," as the local expression runs; vast districts formerly populous have become deserts; sand dunes driving before the winds have swallowed up many a town, whose ruins have since been recovered. The climate has probably become drier, and the soil consequently more arid. Doubtless the early Aryas themselves had frequently to suffer from protracted droughts, and never ceased to invoke Indra, beseeching him to pour down the rain for the sacrifice. But at that time the wilderness, or "land of death," was less extensive, and the regions fertilised by running waters occupied a correspondingly wider area. The gradual absorption of the Himalayan lakes indicates a change of climate, which must have also been felt on the plains. While the snows diminished on the higher ranges, the rainfall fell short on the lowlands.

The hydrography of the Panjab must have also been affected by the natural action of the torrents, which, on issuing from the Himalayan "gates," have to work out their sluggish seaward course across an almost level region. Here the fall of a sandy bank at a given point, or a snag drifting with the current, may suffice to displace the river-bed, or even direct it to another basin. The waterparting, 800 feet high between the Satlej and Jamna, is in appearance a perfectly level plain, rising so gradually that the intermediate ridge, some 86 miles west of the Jamna, is only about 65 feet above the mean level of that river. Most of the streams flowing from the outer Himalayan chain all lie so even with each other and with the plain that they communicate through natural and artificial canals, forming a liquid labyrinth during the floods. They ramify like the ribs of a fan, developing, in the midst of the lowland plains and forests, a sort of delta, which loses itself, not in the sea, but in the desert. A good instance of this phenomenon is afforded by the vagaries of the Gola Naddi, through which the lakes of Kumaon send their superfluous waters to the plains. The Jamna itself, now tributary to the Ganges, probably flowed at one time to the Indus, fertilising the now desert districts of West Rajputana. On the other hand the Sarasvati, which at present runs out in the sands between the Jamna and Satlej, is mentioned in the Mahabharata as an affluent of the Ganges.

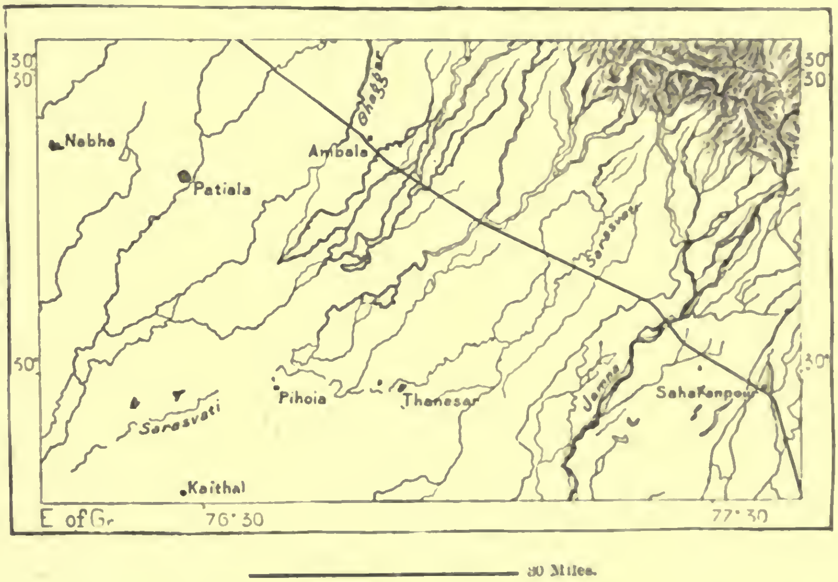
The feeble survival of the Sarasvati or Sarsuti seems little entitled to the songs addressed to it by the ancient Aryan poets. Rising in the advanced Himalayan hills, it brings down to the plains little beyond the rainfall, which is abundant only during the monsoon. At other times the stream, diverted right and left by the irrigation canals, soon runs dry. It is no longer able to join the parallel river Ghaggar, with which it formerly flowed, either to the Indus or directly to the sea at the Rann of Catch. The disappearance of the Sarasvati must have taken place at a very remote time, for the event is spoken of in the old Hindu poems, and associated with a thousand local legends. Traces of its former bed have been followed as far as Bahawalpur, 180 miles beyond Bhatner, the southernmost town now reached by it during the floods. Doubtless the Aryas attributed an exceptional importance to this river, which long formed their frontier line. Still, they could never have described it as they do, had it not really been a considerable stream. The Rig Veda speaks of it as "the fairest, the most loving and honoured amongst the seven sisters;" it is "swifter than the chariot," and "protects its own like a wall of iron." Elsewhere it is a vast stream, piercing the mountains, and surpassing all other rivers with its echoing waters. Its impoverishment cannot certainly be attributed either to the irrigation canals now fed by it, or to a change of climate, or destruction of the upland forests, for these causes have necessarily been felt throughout the whole Indus basin. Hence the present Sarasvati must either be different from that of the Hindu poets, which by no means agrees with a general view of Vedic geography, or else the phenomenon must be referred to one of those displacements of which so many instances have occurred at the "gates" of the Himalayas. As the Tista formerly joined, not the Brahmaputra, but the Ganges, so the Satlej, or one of its branches, flowed not to the Indus directly, or through the Bias, but, trending more to the south, received the waters of the Ghaggar and Sarasvati. It probably flooded the broad waterless bed now crossing the desert,

Fig. 52.—Ramifications of the Gola Naddi.
Scale 1 : 200,000.

and thus formed a continuation of the "holy" river. On the other hand, Fergusson considers that the ancient Sarasvati was formed by a branch of the Jamna.

But however this be, the whole of the Panjab is furrowed in the direction from north-east to south-west by watercourses, some full, some altogether or partly empty, and here and there interlaced with artificial canals. Some of these rivers have belonged successively to two different basins, others have shrunk from the rank of a main stream to that of a simple tributary. Hence the great difficulty of reconciling tradition and historic records with the present hydrographic system, which has been incessantly modified during the course of ages. In this system the only fixed points are the gorges opened in the Upper Panjab Hills, thanks to which, notwithstanding all the vagaries of their lower courses, the "Five Rivers" have not deviated from their upper valleys since the expedition of Alexander.

Fig. 53.—Disappearance of the Sarasvati.
Scale 1 : 1,400,000.



No doubt is entertained by the commentators on the identity of the old and modern names of these streams, which, taking them in the order from west to east, are as under:—

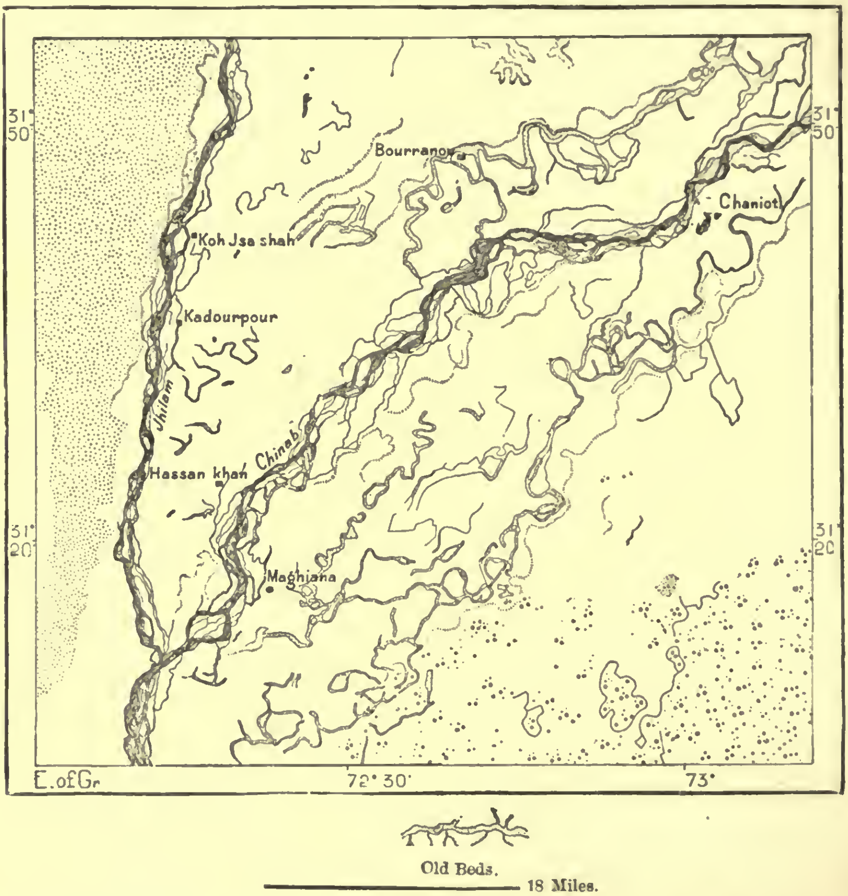
Sanskrit Names.	Greek Names.	Modern Names.
Vitasta	Hydaspes, Bidaspes	Jhilam, Behat, Bedasta
Asikni, Chandra-Bhaga	Akesines	Chinab, Chandra-Bhaga
Parushni, Iravati	Hydraotes	Ravi, Rawa, Rawati
Vipasa	Hyphasis, Hypasis, Bipasis	Bias, Beyah
Satadru, Sutudri	Zadadros	Satlej, Gharrah, Ghasa

Of all these rivers, the most important both in length and volume is the Satlej, which rises near the Tibetan Kailas, not far from the sources of the Indus, Ganges, and Tsangbo. After its junction with the Bias in Upper Panjab, it flows directly south-west to the Trinab, or "Three Rivers," formed by the Chinab,

Jhilum, and Ravi. The main stream thus formed by the confluence of the five rivers, and variously known either as the Satlej, Chinab, or Panjnad, soon effects a junction with the Indus, whose volume they double,* and by which their course is continued towards the south-west. The converging point of the whole system is only 250 feet above the level of the Arabian Sea.

During the floods these rivers assume majestic proportions, and their beds, often some miles wide, become accessible to large vessels. Steamers then ascend the Satlej as far as Firozpur, below the mouth of the Bias. But during the dry

Fig. 54.—Old Beds of the Chinab.
Scale 1 : 1,000,000.



season the Panjab streams dwindle to narrow watercourses, winding sluggishly between islands and sandbanks, and often too shallow to float down the timber rafts. They are frequently fordable, and the discharge is yearly diminished by the

* Discharge of the Panjab rivers at their entrance on the plains during low water:—

Satlej	3,250 cubic feet per second.
Bias	3,150 ,, ,,
Ravi	2,760 ,, ,,
Chinab	4,600 ,, ,,
Jhilam	3,950 ,, ,,

Mean discharge of the Indus at the confluence, 158,000 cubic feet per second.

BRIDGE OF BOATS OVER THE INDUS AT KHUSHAL GARH.

irrigation works, which, on the other hand, constantly bring under cultivation larger portions of the unproductive *doabs*, as the spaces are called lying between any two streams.* On issuing from the hills, the Ravi is twice as copious as at Lahore, and three times more than at Multan, nor would any of the five streams reach the coast independently. Like the Sarasvati, all would run dry but for the Indus, into which they now fall.

THE LOWER INDUS AND ITS DELTA.

Below the little known gorges which it traverses after skirting the Nanga-Parbat, the Indus, or Aba-Sind—that is, "Father of Rivers"—enters the Panjab through a sort of triumphal gateway, the so-called Derbend, commanded on the west by the Mahaban Hills. This gate is the spot formerly known as the "Source of the Indus," although the river is here over 780 miles from its true origin, and has already accomplished nearly half of its entire journey seawards. After traversing a vast plain forming an old lacustrine basin, it is joined by the Kabul River, which here seems to be of equal volume, and which is historically far more important, for this is the great highway to India, followed at all times by migrations, trade, and invading hosts. A little below the confluence the main stream impinges on cliffs, whence the town of Attok—that is, "Barrier"—takes its name. Beyond the broad railway viaduct, which now replaces the old bridge of boats at this point, the Indus again plunges into a long series of steep defiles, where, for a distance of about 100 miles, travellers were formerly compelled to make long detours, either north or south, in order to cross the river. Hence the great strategic importance of the position of Attok, which guards the only route from the Hindu-Kush to the Ganges. The Indus itself has often taken the name of Attok, or else of Nilab, from a fort erected below the town at a narrow part of the bed. In order to strengthen their frontier towards Afghanistan, and to move in two parallel lines on Kabul, the English have built south of Attok a second railway, which rejoins the river at Kushal-garh, and which will later on be continued towards Kohat and the southern slope of the Sefid-koh.

At the Kalabagh (Karabagh) gorge the Indus escapes at last from the hills, and in its winding course through the plains receives only one permanent tributary, the Kuram, from the west. Hence its volume is gradually diminished through evaporation as far as Mithankot, where it is joined by the Panjnad, formed by the confluence of the "Five Rivers." At this converging point of the whole system the vagaries of the united streams during the floods are more dangerous than elsewhere. Mithankot itself was swept away in 1863, and had to be rebuilt on an eminence five miles from the present river bank. But the high-water level diminishes constantly southwards, falling from 50 feet at the Attok defile to 16 at Rohri. Here its bed is contracted in its passage through a small ridge of chalk hills, which somewhat break the monotony of the plains. The cliff on which Rohri stands rises some 40 feet above the mean water level, and the current is broken by the rocky islet of Bakkar (Bukkur), whose summit is crowned by a

* From *do* = two, and *ab* = water, river.

strong castle. At this convenient point the stream will again soon be crossed by another bridge now in progress. Geological considerations tend to confirm the tradition, otherwise unsupported by any historic evidence, that the Indus was formerly deflected by the Rohri Hills directly southwards to the Rann of Catch, where it was joined by the river which was supposed to have formed a continuation

Fig. 55.—The Indus below the Kalabagh Gorge.
Scale 1 : 600,000.

12 Miles.

of the Satlej and Sarasvati through the now dried-up Hakra (Wahind) canal. The depression of the ancient river bed is commonly known as the "Eastern" Narra, or simply Narra ("River"), and this watercourse is still flooded during the rains, expanding here and there into lakes and morasses. The communication between the Narra and Indus is at present effected by a canal constructed with locks; but during exceptional floods the waters of the Indus overflow into the eastern desert and become absorbed in the Pat plains, or even in the saline desert of the Rann. Other deep and broad channels traversing the desert farther south still attest the incessant shiftings of the main stream in its search for the most

favourable seaward outlet. According to Burns, a branch of the Indus known as the Purana, or "Ancient," still flowed in 1672 about 120 miles east of the present mouth.

The constant shiftings of the river-bed always towards the west have had the effect of rendering the eastern regions continually more arid, and of changing many fresh-water channels into saline reservoirs. Analogous consequences have

Fig. 56.—The Eastern Narra.
Scale 1 : 450,000.

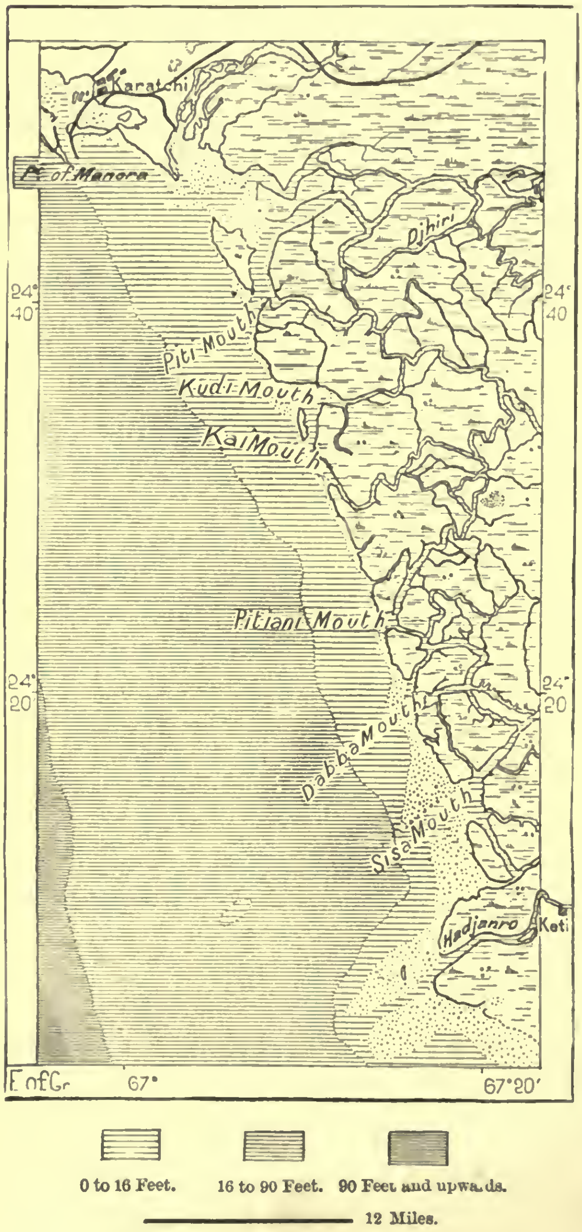
---- Limits of Inundation during the Floods of the Indus.

12 Miles.

been produced by the works carried out by the English engineers for the purpose of regulating the discharge. At one point the Narra skirts the sandy dunes of the Thar desert, and in the dry season the intervening hollows, uniformly disposed in a north-easterly direction, are converted into isolated lakes. Ceasing to be fed by the Narra, many of them became salt-water basins, while others, remaining fresh, were much frequented by the gazelle and inland water-fowl. In order to utilise every drop of water for irrigating purposes, the engineers have now dammed the entrance of these depressions, most of which have thus been dried up and changed to salt pits.

The Indus delta begins 90 miles from the sea, and forms a triangle about 3,000 square miles in extent, with a coast-line 120 miles long. But many of the inlets between the principal mouth and the port of Karachi are improperly described as "Mouths of the Indus," and ought to be regarded as altogether independent of the Indus. During the floods they doubtless receive some small emissaries from the delta, but nearly all are quite saline, and penetrate inland under the influence of the winds and tides. They are in fact marine estuaries resembling those which occur at so many points along the coast of Guinea. Still these creeks were probably at different times real branches of the Indus, for the soil evidently consists everywhere of alluvial deposits brought down by the network of channels in the delta. During the present century the principal mouth itself has been several times displaced. In 1800 it was formed by the Baghar, which was succeeded at intervals by the Sata (Wanyani), the Kedewari, the Kakaiwiri, and lastly by the Hajanro, the present chief branch.

Fig. 57.—The Indus Delta.
Scale 1 : 700,000.



Owing to these constant shiftings it is impossible to determine the actual number of navigable mouths, which may be said to vary on an average from two to ten throughout the year between the dry and rainy seasons. The trading-places situated on one or another of these temporary branches have also necessarily been displaced. Thus Shah-bundar, that is, the "Royal Port," formerly accessible to men-of-war, now lies far inland to the east of the present main channel,

and a similar fate has overtaken Ghora Bari or Vikkar, Keti, and other places. Since the opening of the Karachi railway north of the delta most of the towns situated in the fever-stricken marshy lands traversed by these sluggish branches have been abandoned. At low water the bars at their mouths have a mean depth of from 4 to 8 feet, while the tides rise on an average 16 feet.

Although so little accessible to large vessels, the Indus is none the less one of the great rivers of Asia. At the same time its volume is far exceeded by that of the Yangtze-kiang, Mekong, Irrawaddi, Brahmaputra, Ganges, and apparently even the Shat-el-Arab.* But the mean discharge is greater than that of the Hoang-ho, and the quantity of sedimentary matter brought down is relatively very great, being sufficient to form in a single year an island 65 square miles in extent and over one yard in depth. Every fresh survey introduces new islands and sandbanks on the marine charts. Yet the delta itself projects but little beyond the normal coast-line, a circumstance due to the vast quantities of matter distributed along the coast by the marine currents. Most of the alluvium not so disposed of is lost in a profound submarine trough lying due south of the river mouths, where the plummet has revealed depths of 1,200 feet and upwards. This chasm, or "swatch" as it is called, corresponds exactly with another bearing the same name, which lies at the opposite side of the peninsula over against the Ganges delta.

The Thar Desert.

The eastern section of the depression which stretches to the Aravalli Hills is largely occupied by the desert. The wilderness begins a little south of the cultivated and inhabited zone which skirts the foot of the advanced Himalayan ranges. Arrested by the perfectly level surface or absorbed by the irrigation works, the streams soon run out, while the moist-bearing clouds are driven northwards during the dry season. Still the water continues to percolate for some distance beyond the point where the rivers disappear, and wells sunk along their underground course reach it at depths steadily increasing from 100 to 300, and at Jaisalmir 550 feet. But for 300 miles thence to the Indian Ocean no water is anywhere to be had except from the old emissaries of the Indus and Luni, or "Salt River," which latter flows from the Rajputana Hills.

This formidable Thar desert is by no means a uniform plain, as it is often represented. It is rather a region of dunes, a vast sea of sands, whose billows, like those of the Atlantic, roll along in parallel lines under the influence of the trade-winds. According to Burnes, they are disposed near Jaisalmir north-west and south-east. But the maps published by the Indian Survey Office show them running in the normal direction from south-west to north-east, and occasionally north and south. But whatever be the direction, they everywhere preserve an almost geometrical regularity in their general disposition. If these sand-hills have been caused by the winds, the atmospheric currents must have blown from the

* Discharge of the Indus in cubic feet per second:—During the floods, 613 000; at low water, 41,000; mean 195,000.

north-west, that is, precisely at right angles with those now prevailing during the north-eastern and south-western monsoons. But it can hardly be admitted that such a great change has taken place in the direction of the winds, which depend primarily on the rotation of the globe itself. The dunes may possibly be due rather to the vibration of the ground, which is so frequently disturbed in the Indus region. The highest ridges, which are movable only on the surface when

Fig. 58.—The Rohri Gorge and the Dunes of the Thar.

Scale 1 : 1,000,000.

18 Miles.

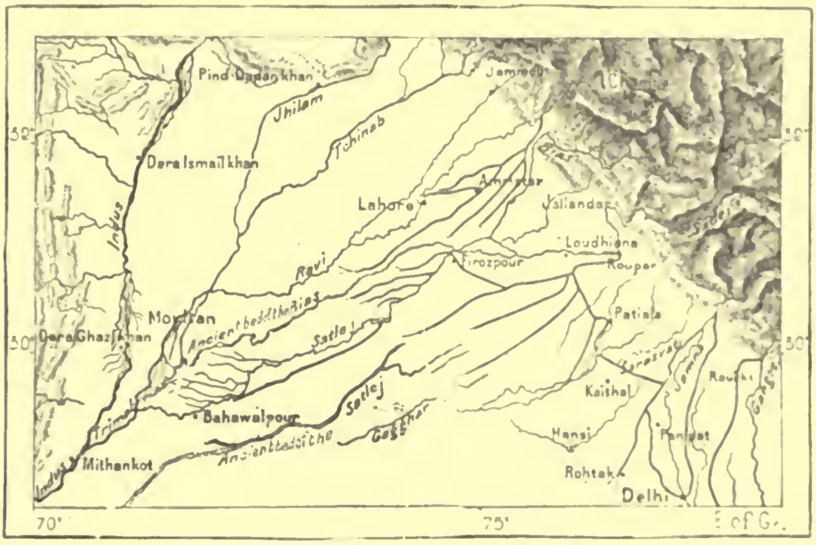
disturbed by man or animals, rise some 430 feet above the surrounding plains, thus exceeding by one-third the largest on the French landes. But the mean elevation is scarcely more than 150 feet, and even less in many parts of the Thar. The zone occupied by the dunes is encircled by the plain known by the name of Pat, a vast yellow or red expanse, here and there dotted with white saline efflorescence.

Although usually spoken of as a "desert," the Thar is not altogether uninhabited, for it has been encroached upon by settlers from many parts of the surrounding over-peopled districts. The mean rainfall scarcely exceeds 7 inches, and the

supply of moisture is so irregular that years will occasionally pass without a single shower. Then the flora of the Thar resembles that of Arabia, consisting of a few thorny shrubs and almost leafless plants with long trailing roots. With the exception of the Bhil aborigines and a few Hindus, who formerly took refuge here from the Mohammedan persecution, the inhabitants withdraw to the more favoured regions of the Indus and Aravali Hills. But with the return of the rains the temporary colonists reappear, and the pastors of the neighbouring districts hasten with their herds to take advantage of the rich herbage which rapidly covers the hollows and even the slopes of the dunes. So vigorous is the vegetation, that enough remains to make provision of fodder for less prosperous seasons. Unfortunately the cattle are decimated by the wolves, which hunt in packs, and are so sagacious that the only means of getting rid of them is to hunt them down in the

Fig. 59.—Canals of the Panjab.

Scale 1 : 8,000,000.



300 Miles.

sultry season, when the animals, so to say, "burn their feet" in the hot sands. They are then easily overtaken by the Bhil hunters, whose feet are protected by fresh sheepskins.

Certain parts of the Thar will probably soon become permanently settled by an agricultural population. Although the rainfall is deficient, the Satlej, Chinab, and Indus discharge copious streams, which might be largely utilised for irrigating the arid soil. At all seasons the volume of the Satlej is at least 5,000 or 6,000 cubic feet, which it would not be difficult to collect at the issue from the hills. During the floods it sometimes sends to the Indus as much as 212,000 cubic feet per second, which ought to be directed by a canal to the heart of the Thar, where the parallel chains of dunes offer exceptional facilities for constructing reservoirs. The Jamna also might be treated in the same manner by restoring the canal cut in 1351 between

its upper course and the old bed of the Sarasvati. These works have already been partly taken in hand, and the Satlej is now dammed at Rupar, where it emerges from the hills. A portion of its stream is thus diverted to a canal, which ramifies over a hitherto waterless tract. Similar works are in progress at Firozpur, farther down, and thus are being revived under another form the glories of the Sarasvati, formerly the most renowned of rivers. The old *banghars*, or alluvial lands, where traces of culture and of other artificial works are everywhere visible, are already beginning here and there to resume their former garb of verdure. But the land has so far been reclaimed only in the so-called *Khadurs*, or alluvial tracts in the riverain valleys of the Panjab and the Indus. In Bahawalpur alone the network of canals has already a total length of over 4,000 miles. In the five years from 1867 to 1871 the value of the crops was more than doubled, and new towns have sprung up in the midst of the wastes thus brought under cultivation. One of these towns, founded in 1868 on the banks of the Fordwah Canal, bears the hybrid name of Minchinabad, in honour of the English governor under whose administration the works of restoration were undertaken. After every harvest over ten thousand workmen, chiefly from the Rajputana States bordering on the Thar Desert, are occupied in clearing the irrigation rills, half choked by alluvial deposits.

The Rann of Catch.

The region stretching south of the dunes is scarcely less remarkable than the Thar itself. It forms a vast expanse, which is neither land nor water, and which, partaking partly of the desert, partly of the lagoon, is known as the Rann, or "Wilderness," of Catch, from the crescent-shaped rocky island bordering it on the south. Opening seawards through a narrow channel, the Rann stretches westwards for a distance of about 140 miles, with a breadth at some points of 60 miles from shore to shore. West of Catch the Northern Rann communicates through a second channel with a similar formation, which is connected with the low-lying coast of the Gulf of Catch. The Rann consists altogether of a saline plain perfectly uniform, and in appearance absolutely even, the elevated spaces in the centre scarcely rising 10 or 20 inches above the general level. In winter and during the dry season the ground, here and there white with saline efflorescences, is as smooth as a mirror, firm and hard to the tread. The rains, finding no natural incline in any direction, form temporary sheets of water, drifting with the wind and encircled by a fringe of foam. In the vast expanse no trace of vegetation is anywhere visible except towards the south, on the more elevated tract known as the Banni, where a few acacias give a scanty shade to the shepherd and his flocks. Some isolated spaces and the shores of the rocky islets are also covered with a thick herbage during the rainy monsoon. But this waterless and grassless plain is carefully shunned by animals, and is frequented only by the wild ass, which is of the same species as that of the Turkestan steppes.

The Rann is a region where the mirage has full play. The smallest object left on the ground, a stone or a dead camel, is visible for many miles, not in its

true form, but with strange fantastic outlines. It will often assume the shape of a tower, or dissolve in floating images, which seem attached to the ground only by a slight cord waving in the wind. The villages of the peninsulas and distant islands appear above the horizon, where they become associated with aërial palaces and temples turned upside down. According to the legend, a city inhabited by the just floats above the Rann, but it has not yet been able to reach heaven, and so gives rise to the mirage.

The Rann undergoes a change in the rainy season, when the marine waters are driven by the south-west winds into the interior through the two channels lying north and south of Catch. The hitherto waterless plain is now covered by a liquid mass about 3 feet deep, and the vast estuary now also receives the sweet waters brought down by the Banas, the Luni, the Narra, and the eastern channels of the

Fig. 60.—Camels crossing the Rann of Catch.

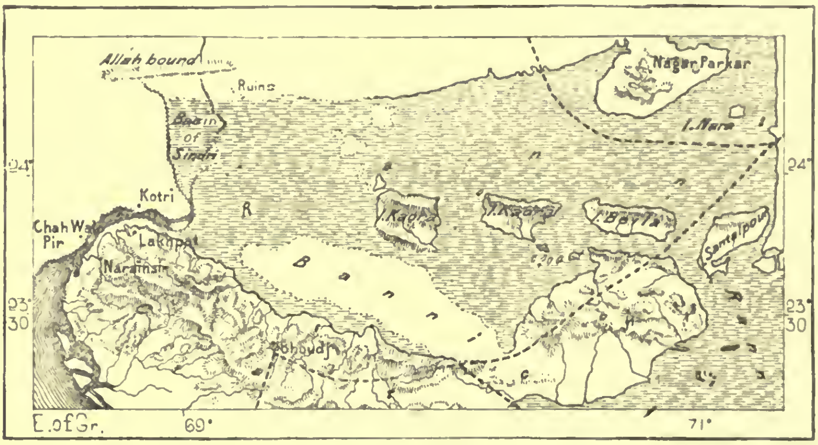
Indus delta. Nevertheless, so level is the ground, that the Rann is never deep enough to arrest the caravans, which cross it at all seasons. But the journey is seldom made by day, when man and beast would run the risk of losing their senses, under the joint action of the great heat, the refraction of the solar rays, and the illusions of the mirage. Hence the caravans cross nearly always by night, under the guidance of the stars or the compass. The eastern section of the Rann will probably soon be traversed by the direct railway line from Bombay to Haiderabad.

What is the origin of this saline plain? It was certainly at one time flooded by the sea, as shown both by the abundance of salt and by the remains of vessels here and there dug up near the surrounding villages. Old seaports are even pointed out in the vicinity of Nagar Parkar, on the eastern side of the Rann. According to a vague tradition, the sea retired about the beginning of the

fourth century. But how has the upheaval taken place with such absolute regularity, which is never presented by ordinary alluvial or diluvial deposits? In 1819 an earthquake, which was felt over a space of at least 100,000 square miles, is said to have considerably increased the area of the Rann by swallowing up certain paddy-fields near Lakhpat. The tower of Sindri, occupied by a body of coastguards, was suddenly surrounded by a lake stretching on all sides some 15 miles, while towards the north another branch of the Indus, formerly reached by the Narra, was dammed by a cross dune about 30 miles long, several miles broad, and from 10 to 20 feet high. To this barrier the natives gave the name of Allah-bund, or "Dyke of Allah," to distinguish it from those raised by the hand of man across the channels of the Indus. The Allah-bund, which since the earthquake has been pierced by erosive action, resembles in every respect the dunes of the Thar Desert.

Fig. 61.—The Rann of Catch.

Scale 1 : 3,000,000.



Projected Railway.

60 Miles.

Hence to the same underground disturbances should probably be attributed the formation of the vast level plain and of the parallel ridges of the Thar. According to the intensity and direction of the shocks, the surface becomes in one place levelled, in another broken into furrows and ridges.

According to the local traditions, the frequent earthquakes which have visited the Indus regions have overthrown several towns and depopulated the country. Among the ruined cities were Balmir, on the southern edge of the Thar, and the far more famous Brahmanabad, which stood 50 miles north-east of the present Haiderabad, on an old branch of the Indus, west of the Eastern Narra. When this place was destroyed, the river itself was displaced, leaving the ruins strewn over the desert. This was the cause which prevented the repeopling of Brahmanabad, some of whose buildings have remained almost intact. This ancient capital had a circuit of about 5 miles, and was connected by extensive suburbs with two other

towns, residence of the king and his vizir. From the explorations made among the ruins, the inhabitants seem to have been skilled potters, painters on glass, ivory carvers, and gem-cutters. Cunningham identifies Brahmanabad, or rather Brahmana, with the ancient city of the Brahmans captured by Alexander when he invaded India. But according to Reinaud, Bahmana, the true name of the city, is of Persian origin. The disaster by which it was overwhelmed, "in punishment of the king's iniquities," seems to have occurred in the eleventh century. Other traditions of earthquakes in this region do not appear to be confirmed by recent research. The trapps and other plutonic rocks, which glitter with the brightest colours in the sun, must have cropped out in still more ancient epochs through the chalks and Jurassic formations of Catch. The Dhenodur Hill, in the western part of this island, which has an elevation of over 1,000 feet, has by some geologists been wrongly described as a volcano.

Inhabitants of the Panjab—The Jats and Sikhs.

Most of the inhabitants of the Panjab and Lower Indus basin are Mohammedans, but all are far from being the descendants of the conquering races who penetrated from the Afghan plateaux into India. Thus among the peoples occupying the skirt of the Himalayas are the Awans and Gakkars, supposed by some writers to have sprung from the Yavana, or Ionians and Greeks, but who, in any case, peopled this region long before the Moslem invasions. Everywhere in the Panjab, except in the Trans-Indus districts and the rugged Potwar plateaux, the substratum of the population consists of the Jats, who have embraced Islam wherever the Mohammedans are in the ascendant, but who have elsewhere remained Hindus, or else have conformed to the Sikh religion, according to the local preponderance of these cults. The Jats, who evidently represent ethnical elements of diverse origin, are perhaps descended from the pre-Aryan aborigines, but are now so mixed that they no longer bear any resemblance to those Dasyu, or black peoples, whom the Aryan invaders conquered and reduced to slavery. Racial animosities have been gradually weakened during the course of ages, only the Jats are now collectively classed by the Brahmans in the Sudra caste. Numbering altogether over 20,000,000, they present many varieties between the Iranian plateaux and the Arabian Sea. Some are almost black, others of a yellowish complexion, scarcely to be distinguished from that of the Rajputs and Brahmans. Some—such as the shepherds of the Thar solitudes—are regarded as barbarians, while others display great intelligence and mental capacity. The term Jat is synonymous in Baluchistan with "robber," in Sind with Banjari, or gipsy, on the banks of the Middle Indus it means "landowner," and on the Rajputana frontiers it is applied to the Rajput and Sudra half-castes. But the bulk of the Jat populations seems everywhere to present much the same ethnical characteristics, and should be physically affiliated to the Aryan stock. They probably reached India through Baluchistan. Temperate, industrious, skilful, and very brave, notwithstanding the conquests and oppression of so many successive masters, the Jats form altogether one of the most

interesting racial elements in the peninsula. To this stock belong those valiant Sikh warriors who made such a determined stand against the British in North-west India.

The Sikhs, that is, "Disciples," formed originally a group of sectaries rather than a distinct nationality. Their religion had its rise towards the close of the fifteenth century in Panjab, where a daring reformer attempted to reconcile the Hindu and Mohammedan systems. Nanak, founder of the new sect and author of the first chapters of the Granth, or "Book," revered as their Bible by the Sikhs, professed little more than a belief in one God, rejecting most of the rites peculiar to the different cults. But to reconcile Mussulman, Brahman, and Jat, it was not enough to convince them of the fundamental unity of their religions. They had also to be brought into closer relationship by the suppression of all racial and class distinctions. Although himself a Hindu of the Kshatrya, or military caste, Nanak proclaimed the equality of mankind. But being reluctant to be classed with the common herd who know no ancestors, the "Disciples" were fain to declare themselves nobles in order to remain free, and all now regard themselves as Kshatryas. This title they also amply vindicated by their valour in all the local wars by which their power was finally established towards the end of the seventeenth century. Fully armed for the struggle, disembarrassed of false friends by persecution, proud of their common share in the government of the community, the Sikhs justified the prophecy of their founder, who, while comparing them to sparrows, at the same time promised them victory over the eagle.

Pre-eminently warriors, all were required constantly to wear a coat of mail, a dagger, or some other defensive or offensive weapon. Usually very fine men, covered with glittering arms, with their long uncut hair streaming in the wind, the Sikhs easily recognised each other at a distance on the battle-field, and by a natural play of words they soon came to be known by the name of Singh, or "Lions." Constituting a federal republic, they elected their common chief, who was bound on all serious occasions to consult the *Khalsa*, or "National Assembly," formed of the elders and leading captains. Notwithstanding their religious and intestine wranglings, they gradually acquired the political supremacy throughout the whole region stretching from the Indus to the Ganges, nor did they yield to the superior armaments of the British without a protracted struggle and many a fiercely-contested pitched battle.

At present the Sikhs, who form scarcely a tenth part of the population in the Indus basin, have ceased to be a nation, and have again sunk to the position of a religious sect, grouped chiefly round about the holy city of Amritsar. But they are kept united by their heroic traditions, nor have they ceased to exercise great political and religious influence over all their neighbours. The Brahmans themselves read with reverence the "Book of the Disciples," and some Englishmen, amongst whom the famous traveller Burton, have been initiated in the doctrines preached by the prophet Nanak. The agricultural Sikh communities are the most interesting in India, both for their industrious habits during peace and valour in arms. The Sikh troops are perhaps the very best in the British service, equalling

the Gurkhas themselves in prowess, while surpassing them in discipline and nobility of character. Of an extremely adventurous disposition, they have always volunteered to follow the British arms to China, Abyssinia, and quite recently to Egypt; and such is their love of learning, that their principal scientific association at Lahore has petitioned the Government to secure for all Sikh children the benefit of school instruction. No other ethnical group in the north-west supplies an equal proportion of pandits.

The Hindus and Afghans.

The Hindus proper, whether Brahmans or Vaisyas, are relatively less numerous in the Indus basin, although the religions of Aryan origin here comprise at least one-third of the whole population, while the current languages—Panjabi in the north, Sindi in the centre, Guzerati in the south, Marwari in the south-east—are all of Sanskrit origin. Grouped chiefly in the towns, where they are engaged in trade and industry, and where they occupy the most remunerative positions, the Hindus have gradually recovered the superiority over their former Mussulman oppressors. These mahajan, or "great citizens," as they are called, constitute the moneyed classes, and for their advances to the surrounding Mohammedan peasantry they are too frequently inclined to exact extortionate interest. The Baniahs, or Banyans, also of these regions, are the shrewdest traders in India. Under the general name of Multani, from the central mart of the Indus Valley, these Hindu merchants from the Panjab are met in all the cities of Central Asia. They are the chief disseminators of news and of warlike rumours, which travel with such surprising rapidity from the banks of the Ganges to the Oxus. They unwittingly form a sort of Russian vanguard on the Indian frontier, everywhere proclaiming the power of the White Czar. In Central India, in Bengal, and as far as the Burmah and Chinese frontiers, the Banyan element is supplied by Marwari, or Hindus of the Rajput state of Marwar, who represent in these regions the Jewish and Armenian money-lenders of the West.

The Hindus of the north-west are mostly worshippers of Vishnu, although the red mark on their brow is often traced horizontally, as if Siva were their chief deity. Surrounded by Mohammedans and Sikhs, and remote from the Brahmanic centres, they are not over strict observers of their religious forms, and thus become a stumbling-block to the more zealous Sepoys from the east, who garrison their towns. The use of strong drinks, and especially of *bhang*, a more injurious drug than opium, is very common amongst them. In most of the Panjab villages a quarter is set apart for the Chura, a low-caste people, differing little from their neighbours outwardly, but who are regarded as impure even by the Mohammedans. The office of night watchmen is hereditary amongst them.

Farther east the Bhils of Rajputana have advanced far into the oases of the desert, while from the west, Afghans, Baluchis, Brahuis, Persians, Bokhariots, Turks, and Arabs have since the hijra penetrated at various epochs into the land, either as conquerors, settlers, or mere adventurers. These immigrants, diversely intermingled with the aborigines, form the bulk of the Moslem communities on the

banks of the Indus and throughout West Panjab, whereas in the eastern districts the followers of the Prophet are chiefly converted Hindus. But the line is far from being distinctly drawn between the two great classes of Indian Mohammedans. Owing to the suppression of caste by Islam, zealous Mussulmans can easily claim any convenient origin. Thus hundreds of thousands in Panjab call themselves descendants of the Prophet, and consequently take the title of *Sayd* and *Shah*. The Daudpotra, or "Sons of David," who rule at Bahawalpur, are amongst those who suppose themselves members of Mohammed's family. Others claim the title of Mongols, and these seem, at any rate, to belong to a distinct group, for in the towns where they dwell they keep entirely aloof, and follow special pursuits. Many of these *beg*, or *mirza*, as they are called, even betray the broad and flat features characteristic of the Mongol nomads of the Gobi. The Mohammedans of Afghan race, nearly all collectively known as Pathans or Rohillas, are very numerous in the Trans-Indus districts, where the heads of each family claim the title of khan. All the other non-Hindu Mussulmans, whether of Persian, Turki, or Baluchi stock, call themselves *sheikh*, a name which has become so common that it has ceased to be distinctive. All the wealthy classes replace it by some higher title, whence the ironic local proverb—

> To-day a sheikh, yesterday a cheat,
> Sayd to-morrow, with the rise of wheat.

The system of small holdings prevails in the Panjab, although in many places the old communal right has been preserved. All tillers of the soil are regarded as simple farmers of the commune, to which they pay a yearly rent. They are, moreover, collectively responsible to the State, and the impost is paid for the whole village. It also happens that a portion of the lands become alienated and farmed out to strangers. In this case all the members share in the profits of the sale, in proportion to their rights to the common property. They have the further right of redeeming the land on more favourable terms than the people of other communities. Amongst the Afghan tribes of the Dera-Ismail-Khan district the soil is redistributed every six years. Even where the land has been seized by conquest, the village has often preserved its communal constitution. The necessity of irrigating the ground naturally obliged the inhabitants of each district to combine for the purpose of digging canals; hence the unity of the commune has almost everywhere for its material cause the existence of a common canal, tank, or spring. Great political convulsions and intestine wars were needed to destroy this system and break up the interests of the joint proprietors. In some districts the canals and springs belong to different owners from those of the land, who have been obliged to become feudatories under the contractors of the irrigation works. Nevertheless, of all Indian ryots those of the Panjab may be regarded as having preserved the greatest degree of independence, and to this relative freedom is certainly, in part, due the pride and spirit by which the Jats are distinguished. In Sind, on the other hand, the Baluch rule, combined with the usury of the Hindu money-lenders, has reduced the peasantry to a real state of serfdom, attended for the Jats, as well as for others, by much moral debasement.

THE RAJA OF BAHAWALPUR AND HIS COURT.

Amongst the immigrants from the Iranian plateau, some have maintained the tribal organisation in full vigour. Such are the Swats, Momunds, and Yusufzais, who dwell north of Peshawar in the plain and on the neighbouring hills. They are of Afghan stock, akin to those who crossed the Indus and penetrated to the Ganges basin, where they founded at the foot of the Himalayas the petty warlike states known by the general name of Rohilkhand, or "Country of the Hillmen." The Yusufzais (Yusafzais) are one of those Afghan tribes which have been most

Fig. 62.—Plain of Peshawar.

Scale 1 : 450,000.

frequently compared to the ancient Jews, and many missionaries have even accepted the Mussulman tradition of their descent from the Israelites led captive to Assyria. It is at least certain that their customs and religious practices strongly resemble those of Palestine during the time of the Judges. At an interval of some three thousand years they are still in the same transitional state of culture. Recently nomads, and now agriculturists, but always warriors, chafing with impatience at the recital of their heroic deeds, the Yusufzais are divided into a large number of clans,

themselves subdivided into secondary groups, often at feud with each other. Long-standing family quarrels are transmitted from generation to generation, and to terminate their disputes they will often engage in mortal combat at the tribal gatherings, thus giving rise to fresh hereditary feuds. Zealous Sunnites, the Yusufzais are distinguished by their fierce fanaticism, and the punctuality with which they pay the tithes to their numerous mollas. These priests, like the Levites of Israel, form a distinct tribe, exempt from taxation, while their holy cities serve as sanctuaries for criminals. But notwithstanding these points of resemblance with the Israelites, the Yusufzais are pure Afghans, their Pushtu speech differing little from that current on the plateau.

The Afridi, another large Afghan tribe occupying the highlands skirting the south side of the plain of Peshawar, are, like the Yusufzais, divided into khels, or septs, often hostile to each other. Farther south the Sulaiman upland valleys are occupied by the Marwatti, an agricultural and pastoral people, of a much milder character than the Afridi, and specially distinguished by their simple habits, love of truth, and respect for the female sex. On the other hand, the Baunuchi, or people of Baunu, long enslaved to a number of petty chiefs, have lost all the pride and manliness of the neighbouring tribes. In their emaciated forms and debased habits they present a striking contrast to the free Waziri of the highlands to the west of Dera-Ghazi-Khan. Always armed, like their Pathan neighbours, the Waziri still remember the days when their forefathers warred in India, captured Delhi, and imposed their mandates on kings and Brahmans alike. Even now they prefer military service, and at the first summons hasten to rally round their chiefs, bent on warlike or predatory expeditions.

Topography.

Towards the north-west frontier *Peshawar* forms the bulwark of the British Empire. Lying in the middle of the plain watered by the Lander, or Kabul River, above its confluence with the Indus, this place occupies a vital position on the main trade and military route from the Iranian plateau. Yet it is merely a city of brick and mud houses, defended from marauders by an earthen rampart. But on the north side stands the formidable fortress of Bala-hissar, while the British cantonments occupy the neighbouring slopes, commanding a view of the whole plain and of the distant Afghan hills. Other fortified posts complete the outworks of the vast encampment which the Indian Government has been compelled to form at this weak point of the frontier, and towards which the shadow of Russia has already been projected. Towards the north *Fort Abazai* guards the entrance of the Swat River gorges, and other works have been erected at intervals along the foot of the hills. On the north-west the main approach through the Kabul River Valley is commanded by *Fort Mishni*, at the converging point of the two great canals watering the plain. On the west and south-west the Peshawar cantonments are protected by the *Jamrud* and *Bara* forts, while *Fort Makeson* guards the plain on the south from the raids of the Afridi Afghans. South of this fort passes the

LATABAND PASS—VALLEY OF THE SHADOW OF DEATH.

route connecting the two British towns of Peshawar and *Kohat* over the hills, which form an eastern continuation of the Sefid-koh, or "White Mountains," the Spinghar of the Afghans. This route has often been closed or neglected by the Afridis, notwithstanding the treaties obliging them to keep it open and in good repair. But the political frontiers are still somewhat vaguely laid down in this region, whose independent and warlike tribes reject the suzerainty of the Afghan Amir, while on its part the British Government has abandoned the "scientific" frontier recently drawn through the Lataband and Shutar-gardan Passes, east of Kabul, and along the water-parting parallel with the Sulaiman-dagh. Nevertheless, England may be considered as the true suzerain of the country beyond the limits marked by the line of frontier forts, for the chiefs of all the surrounding tribes

Fig. 63.—Afghan Passes between Peshawar and Kabul.
Scale 1 : 3,800,000.

60 Miles.

are her pensioners. In return for their subsidies, they engage to keep the roads and tracks in repair, and thus gradually become imperial vassals.

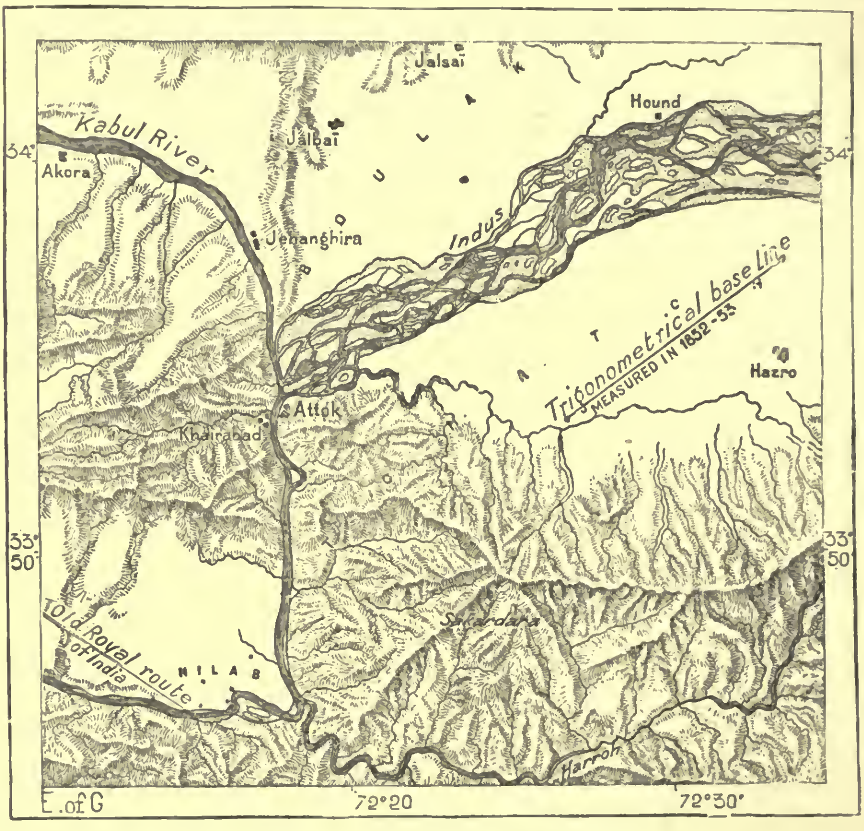
The ancient Ghandara country, of which Peshawar is the present chief town, has preserved but few of its historic monuments, the conquerors following this route to India having destroyed the buildings erected by their predecessors. Of *Pushkalavati*, the *Penkhelaotis* of the Greeks, nothing remains except a heap of débris near the confluence of the Kabul and Swat Rivers, where now stand *Charsudda* and *Prang*, two of the Hasht Nagar, or "Eight Cities." *Ohind*, on the Indus, supposed to be the old *Embolima*, has been partly swept away by the stream, and to treasure-seekers yields little now beyond a few medals and bronze objects buried under the crumbling banks. The famous rock of Aornos has remained unidentified, and the chief Buddhist monuments have disappeared like those of the Aryan and Greek periods. The tope, 400 feet high, seen by the Chinese travellers near Peshawar, exists no longer; but the "inscribed rocks" are still visible in the upland valleys north of the plain. In the Yusufzai country old ruins, and

especially fragments of Græco-Baktrian architecture, are also very numerous. Here huge monoliths, disposed in circles, like those of Stonehenge, stand at the entrance of the mountain gorges, and near this frontier may still be seen one of the pillars on which Asoka had his imperial edicts inscribed.

South-east of the bridge over the Indus at Attok, the historic route from the Hindu-Kush to the Ganges, now accompanied by a line of railway, traverses the chief cities of Panjab. *Rawal-Pindi*, on the Upper Sohan, is a modern place, but the British military station stretching southwards occupies the site of the ancient

Fig. 64.—Entrance of the Attok Gorge before the Construction of the Railway.

Scale 1 : 360,000



6 Miles.

Gajipur; while on the north stood the famous *Takshasila* (*Taxila*), the most important of all the Indian cities visited by Alexander. Its position has been determined by Cunningham near the town of *Shah-deri*, but its ruins cover a space of about 6 square miles, while the remains of vast suburbs are visible in every direction. Temples, monasteries, and upwards of fifty topes, some amongst the largest in India, recall the days of Buddhist fervour, when Takshasila became the residence of Asoka, builder of the grandest monuments dedicated to Buddha. Another famous tope, that of Manikyala, discovered by Elphinstone east of the

GENERAL VIEW OF LAHORE.

Sohan Valley, stood not in a city, but in the midst of a group of Buddhist temples and monasteries.

Jhilam, on the right bank of the river of like name, is not a large place, but the neighbourhood is strewn with the ruins of some ancient cities. Those founded by Alexander on both banks of the Hydaspes (Jhilam), in honour of his victory over Porus, cannot be identified with any certainty. The Græco-Baktrian coins found amongst the débris near *Jalalpur* differ in no respect from those picked up in other parts of the north-west. At present the largest and most commercial town in this district is *Pind Dadan-khan*, on the right bank of the Jhilam, and at the foot of the southern slopes of the Salt Range. Here are built most of the boats for the Jhilam, and at *Miani*, on the opposite side, is the vast depôt of salt, brought by rail from the Kheura mines, which are now officially known as the Mayo mines, in honour of the viceroy of that name. The works, which are government property, give employment to a low-caste tribe, which suffers much from goitre and other ailments.

The towns situated on the Chinab along the line of the great historic highway have flourished and decayed with the shiftings of the stream. *Gujrat*, at present over 4 miles south of the river bed, is chiefly an industrial town, producing beautiful gold and steel filigree objects of great artistic merit. *Wazirabad*, on the left bank of the Chinab, at the head of a railway bridge no less than 3,000 yards long, and resting on 64 piers sunk over 60 feet in the sand, is mainly a modern town. Built on a regular plan by the Italian General Avitabile, in the service of the Sikh Raja Ranjit-singh, it has become the chief arsenal and centre of navigation for the Chinab. The passage of the river at this point was till recently guarded by a military cantonment, but the troops have been removed farther east to the town of *Sialkot*, whence the frontier and the capital of Kashmir can be more easily commanded. Sialkot has some cotton and paper mills, and its fairs attract many thousand visitors, at once pilgrims and traders. It is mentioned in the old Hindu poems as the capital of the country over 2,000 years ago. *Taki*, the chief town of Upper Panjab at the time of the Chinese pilgrimages to India, stood farther south, in a now desert district condemned to sterility by the shiftings of the Ravi and exhaustion of its canals. The ruins of the ancient city, identified by Cunningham, lie near the village of *Asarur*, north-east of the Sangal (Sangola, Sakala) Hill, where Alexander gained one of his victories. At present the chief place in the doab between the Chinab and Ravi is *Gujranwala*, a station on the Panjab railway. Although bare, sandy, and treeless, the surrounding district, occupied in the last century only by a few predatory bands, has now a population of over half a million.

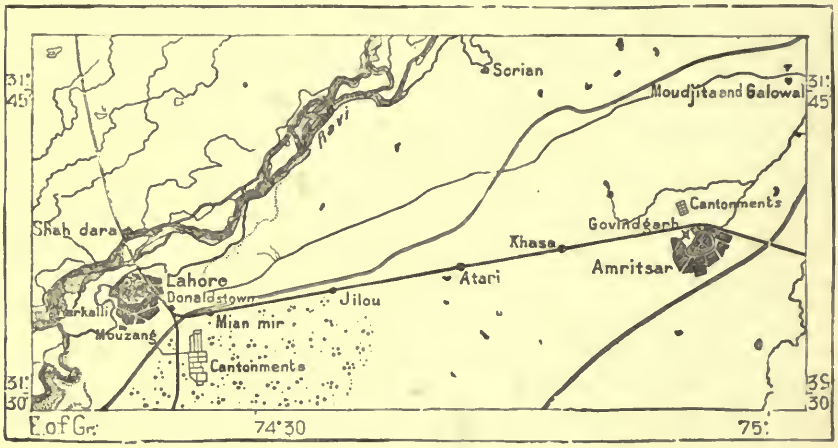
Lahore, the *Lohawar* of the ancient writers, succeeded Taki as capital of Panjab. For three centuries it was the centre of resistance against the Mohammedan invasion, and afterwards became the residence of the Ghaznevide sovereigns. Under the Moghul rule it was also frequently resorted to by the emperors, and here the Sikh rajas built their palace. Now the English have made it the centre of administration for all the north-west provinces. After a period of decadence

Lahore has thus entered on a fresh epoch of rapid increase. An English quarter has been built south of the Hindu city, along a cliff formerly washed by the Ravi but now displaced farther west. An elegant boulevard leads thence eastwards to the *Mian mir* cantonments, giving Lahore a total length of over 7 miles between the tomb of Jehanghir at Shar-dara on the north and the last outposts of Mian mir. Its future prosperity is henceforth secured more even by its commercial position than by its administrative privileges. At this point the Karachi railway forms a junction with the main line between Peshawar and Calcutta.

The finest monuments of Lahore date from the period of the Great Moghuls, and although many have been stripped of their marbles and enamelled faïences or else partly demolished, enough remains to excite the astonishment of the visitor. Standing in the midst of palm groves, gardens, and fountains, the palaces and mosques present a noble sight, with their spacious vestibules, peristyles, bay

Fig. 65.—Lahore and Amritsar.

Scale 1 : 700,000.



12 Miles.

windows, verandahs, pavilions, minarets carved like ivory, and coloured marble cupolas. Amongst the recent buildings are the university and the museum, which contains the finest collection of Græco-Baktrian, Buddhist, and Hindu artistic objects in India. Thanks to the enlightened spirit of its Sikh inhabitants, Lahore has become the centre of letters and learning for the whole of Northern India.

Yet the true metropolis of the Sikhs is rather *Amritsar*, which lies some 30 miles farther east, in a small depression traversed by an irrigation canal from the Ravi. This site had been occupied by the ancient city of *Chak*, which, however, had disappeared, when a Sikh apostle built here the sanctuary which takes the name of Amritsar, or "Lake of Immortality," from the tank reflecting its marble walls and steps. Pilgrims flock every year in hundreds of thousands to worship at the bridge connecting the temple with the mainland, and at the elegant archway surmounted by a wide gilded copper dome. Amritsar was long the common property of the Sikh confederation, and each of the clans had here a special quarter.

The concourse of faithful from all parts has given to the Amritsar fairs great commercial importance. This city is also the depôt of the goods forwarded from Bombay and Calcutta to Kashmir and the markets of Central Asia. Immigrants from Kashmir have introduced the shawl, cloth of gold, and embroidery industries,

Fig. 66.—Golden Temple and Lake of Immortality at Amritsar.

which in prosperous years employ over 4,000 looms. During the great feasts all the streets are hung with shawls and costly fabrics.

North-east of Amritsar lies the commercial and industrial town of *Batala*, and on the banks of the Satlej near its entrance on the plains stands *Anandpur*, the "City of Peace," also one of the holy places of the Sikhs. Their Granth, or Bible, is carefully preserved in a temple at *Kartarpur*, near *Jallandar*.

East of Lahore the cultivated and inhabited zone becomes more and more contracted between the foot of the hills and the arid southern plains. Here begins

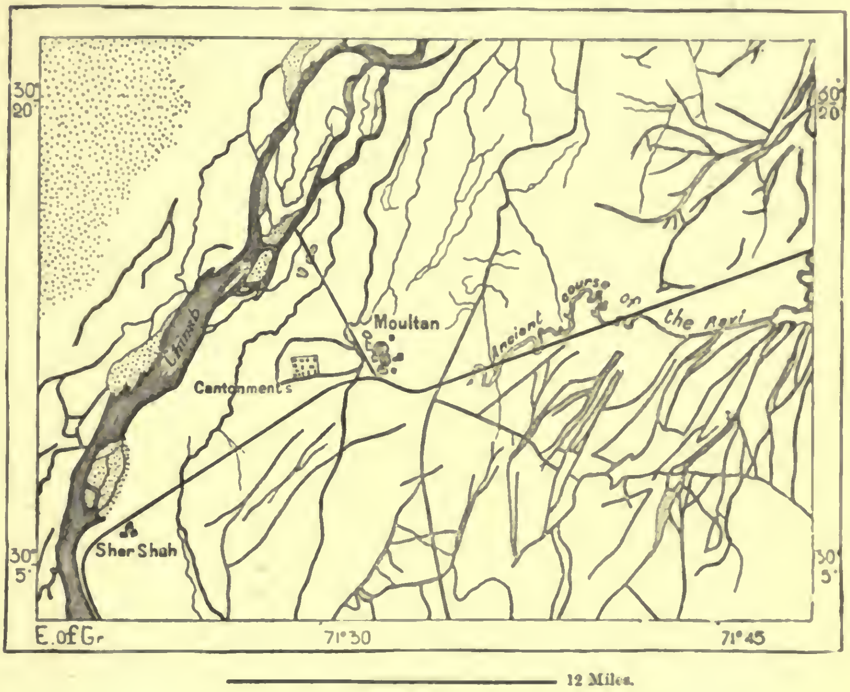
the district which has in a military sense been called the "Belgium of India." In the ancient poems are described the deadly struggles which here took place between the Kurwides and the children of Pandu. Since the mythical times this region, forming a natural route for armies and migrations, became the actual scene of all the decisive battles fought in Northern India. The English have accordingly taken care to establish here a chain of entrenched camps, in order to secure their communications. *Firozpur*, lying on the right bank of the Satlej, south of Amritsar, has become the largest arsenal in India. *Jallandar*, a group of towns within one enclosure, also occupies an important strategic point towards the north-east on the main trunk line of railway. Its cantonments cover a larger space than all the Hindu cities of the country. Farther on *Ludianah*, with its citadel on the right bank of the Satlej, guards the passage of the river, which is here crossed by a viaduct 3,000 yards long. All the garrisons of the Panjab are supplied with corn from the granaries of this place. Beyond it stands *Ambala* on the Ghaggar, with a vast encampment covering 7,000 acres of ground. A whole military division guards this central position, which is doubly important as the chief intermediate station between Lahore and Delhi, and as the bulwark of Simla, summer capital of British India. Forming the starting-point of travellers proceeding in the hot season to the hills, the bazaars of Ambala are better supplied than any other in the north-west with English merchandise. To remedy the deficient supply and bad quality of the water an Artesian well, 450 feet deep, has recently been sunk in the neighbourhood.

The British military stations of East Panjab already far exceed in population the ancient Hindu cities of the country, not even excepting *Kapurthala*, *Putiala*, and the other capitals of the petty tributary states. Of *Sarhind*, formerly capital of the kingdom of Satadru or Satlej, nothing remains except ruins, which however still give their name to the surrounding district. By a play of words common enough in geographical nomenclature, the term Sar-hind has acquired the sense of "Frontier of Hindustan," as if indicating the approximate limit between the Mussulman territories of the north-west and the Hindu domain properly so called. But in its reminiscences of the past no district of the peninsula is more thoroughly Indian. The traditions have not yet perished of the days when it was pre-eminently the Holy Land of the Aryas. Hence pilgrims still flock in thousands to *Thanesar*, *Pihoia*, and all the other sanctuaries fringing the uncertain course of the Sarasvati. As many as 300,000 devotees gather at times to bathe in the muddy basin of Thanesar, while thousands of widows fill the open spaces of Pihoia with their doleful lamentations. *Sirsa*, near the ruins of *Sarsuti*, lies far to the south, on the verge of the desert, but it still receives during the floods a little water from the sacred stream whence it takes its name.

The "Five Valleys" of the Panjab present the form of a fan. Broadening out at the Daman-i-Koh, or "Skirt of the Hills," they gradually contract towards the ferry of Mithankot. Hence in the well-watered northern region large cities are distributed all along the old historic route, at the passage of the various streams or in the intervening doabs. But not more than one trading centre is found in the

much narrower and far more arid corner of South Panjab. This is *Multan*, ancient capital of the Malli vanquished by Alexander. Its origin, going back to mythical times, is attributed to the father of the Solar Gods and Titans, and under Aurengzeb the citadel still enclosed a temple of the Sun, which was removed by that emperor to make room for a mosque. Multan formerly occupied two islands in the channel of the Ravi, but this river has long shifted its course to the Chinab, 5 miles farther north, sending down during the floods nothing but a feeble current to its old bed. At present the nearest river to Multan is the Chinab,

Fig. 67.—Multan and Old Course of the Ravi.
Scale 1 : 450,000.



flowing 4 miles to the west. Here have been constructed the port and dockyards of *Sher Shar*.

Bahawalpur, capital of one of the largest dependent states in the north-west, is one of those places which have most benefited by the general restoration of peace under the British rule. The Sind railway makes a long circuit to the east in order to traverse this place, which it reaches by a magnificent bridge over the Satlej. The surrounding plain is intersected in all directions by irrigation rills from the main stream, and new towns have sprung up in the wilderness which has thus been reclaimed. The prosperity of Bahawalpur has also been promoted by its silk industry, introduced from Benares, and already swelling the exports to Afghanistan and Central Asia.

Some important places have also been founded in the Derajat, along the course or in the vicinity of the Indus, towards the Afghan frontier. Here the streets of

Kalabagh, or the "Black Garden," rise in terraces on a salt rock at the issue of the gorge by which the river pierces the Salt Range. The houses are so disposed that the terraces of each row serve as the streets for the next, and above these crescent-shaped stages rises a salt cliff, whence the fiscal authorities watch over the

Fig. 68.—Parallel Ranges north of Dera Ghazi-Khan.
Scale 1 : 1,530,000.

12 Miles.

inhabitants, to prevent them from helping themselves from the stores of salt lying at their feet. The salt works are carried on at the village of *Mari,* on the other side of the river, and might be more productive were the government monopoly to cease. The surrounding hills also yield alum and iron ores.

Dhulipnagar, or Edwardesabad, as it is now officially called, although a small place, derives great commercial and strategic importance from its position in the hilly Bannu district at the converging point of several routes from Afghanistan. Nearly all the surrounding heights are crowned with the ruins of ancient monu-

Fig. 69.—The Kachi-Gandava Plain.

Scale 1 : 800,000.

30 Miles.

ments dating from every epoch since Buddhist times, and now collectively known as the Kafir Kot, or "Forts of the Infidels."

Dera Ismail-Khan, a modern town, heir to one of like name destroyed by a rising of the Indus in 1823, also occupies a strong position at the issue of the Gomul Pass, and not far from the Takht-i-Sulaiman. Here the caravans of the warlike Povindah traders assemble twice a year for Afghanistan. As many as 12,000 men

and 35,000 camels annually traverse the pass, representing a trade of about £350,000. A brisk trade is also carried on by *Dera Ghazi-Khan*, the outlet for Multan on the Indus. As the emporium of southern Derajat it has succeeded *Mithankot*, which has been compelled, by the inundations of the Indus, to withdraw farther inland, and which has consequently been abandoned by traders. A large fair, frequented by Hindus and Mohammedans, is also held near the famous temple of *Sakki Sarwar*, which is guarded by a tribe numbering over 1,600 persons, who share between them the offerings of the pilgrims.

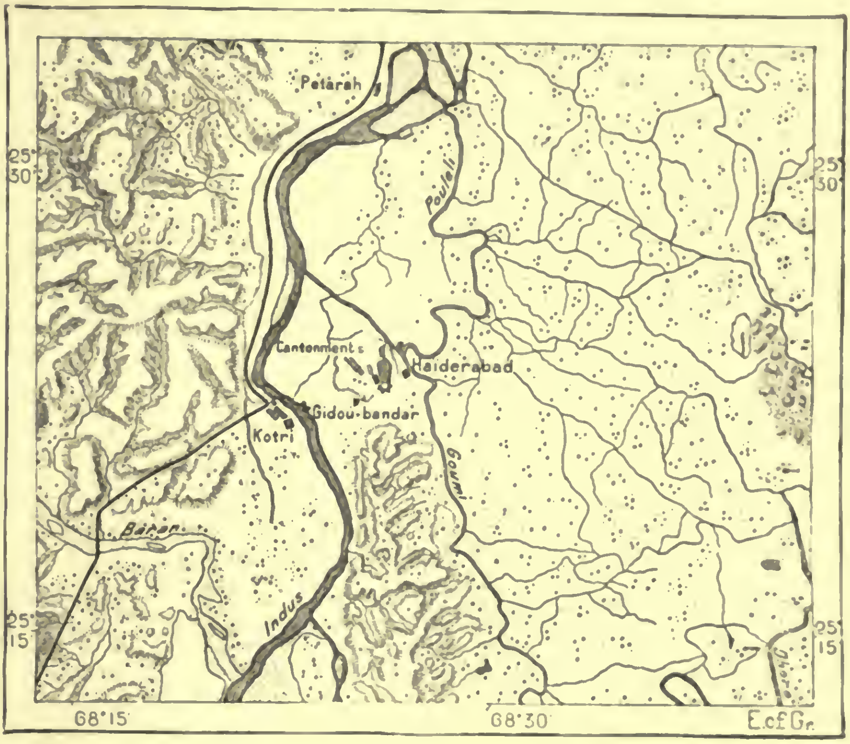
The commercial centre of the Indus region between Mithankot and the head of the delta is *Shikarpur*, founded in the midst of gardens and orchards in a well-watered plain, which was formerly a marine inlet. The great importance of Shikarpur is due to its position on the route which penetrates to Baluchistan either through the Harnai or the Bolan Pass, south of the Sulaiman-dagh. It has thus become the chief entrepôt for the merchandise forwarded from all parts of India, and even from England; and this export trade is increased by the carpets and cotton stuffs made on the spot. Shikarpur was chosen in 1880 as the starting-point of the railway which is destined one day to connect India with the Mediterranean, through Kandahar and the Euphrates Valley. The works of the first stage were commenced with a vigour which promised soon to see the section completed as far as Kandahar. The first stage of 130 miles was actually finished in 101 days, and the pass up to the plateau was being taken in hand, when the accession of the Liberal party to office caused the works to be abandoned. The line, beginning at *Sakkar*, communicates with *Rohri*, the ancient *Aror*, by a steam ferry, which is soon to be replaced by a viaduct. Northwards it stops, at present, at the foot of a mountain gorge near *Sibi*, the old capital of Sewestan; and although it is not intended to be carried farther than the fort of Kettah (Quettah), in Baluchistan, it will at least spare travellers the painful journey across the Kachi-Gandava desert. Most of the territory stretching to the foot of the hills is officially a political dependence of Baluchistan, but British rule is practically here established, and the whole plain is guarded by the *Jacobabad* cantonments near the nominal frontier.

Haiderabad, the ancient *Nerankot*, stands on an eminence near the head of the Indus delta. About 12 miles above this point the Puleli channel branches off from the main stream and flows thence to the Lakhpat estuary at the entrance of the Rann. But when the Indus passed farther east through the Purana channel, the ramification seems to have taken place at the foot of the Nerankot eminence itself. According to Cunningham and other commentators, the modern city occupies the site of the ancient *Patala*, capital of the country at the time of Alexander's expedition. It became, subsequently, so famous as the port of the sacred river, that its name became synonymous with the "Gate of Salvation," and from it the Buddhist temple of Lassa is said to have been called Potala. At present, Haiderabad has little importance except as a strategic position, although its arms, gold and silver embroidery, enamelled gems, and other artistic objects are much appreciated in Europe. It stands nearly 7 miles from the river, where its outpost is the village

of *Gidu-bandar,* which communicates by a steam ferry with *Kotri,* on the right bank of the river. These places are protected by high embankments from the sudden inundations of the Indus and its tributary the Baran.

Thanks to the railway connecting it with Karachi, the seaport of the whole Indus basin, Kotri has long enjoyed a large trade, which, however, has been considerably reduced since the line has been connected with the Indian system. *Tatta,* lying farther down, near the most frequented passages of the Indus, has even suffered still more from the completion of the network. Towards the end of

Fig. 70.—Haiderabad.
Scale 1 : 450,000.



12 Miles.

the seventeenth century, 80,000 persons are said to have been carried off by the plague at this place. Yet when seized by Nadir Shah, in the middle of the next century, Tatta is said to have contained as many as 60,000 merchants, 40,000 weavers, and 20,000 other artisans. At present the whole population of this fever-stricken place is scarcely more than 8,000.

Karachi resembles Marseilles, Venice, Alexandria, Odessa, Barcelona, and other great seaports lying beyond their proper river basins, for its only connection with the Indus is through a recently constructed canal. Owing to the intricacies of the river navigation, the English naturally opened one of their first railways from Karachi to the head of the delta. The craft plying on the Lower Indus draw scarcely more than five feet; nor has the increase of navigation been so great as

might have been expected, even since the introduction of steamers in 1835. In India, as in West Europe, the water highways have been unable to compete with the more expeditious railway traffic.* The Indus fisheries are still important, especially in the delta, which yields the *pala*, differing little from the *hilsa* of the Ganges, and supplying the staple food of all the riverain populations. In the neighbouring seas are also taken a species of herring and a shark, whose fins are forwarded to Bombay for China, where they are regarded as a delicacy. The caste

Fig. 71.—Karachi.
Scale 1 : 120,000.

of fishermen are distinguished by their intelligence and daring from the other inhabitants of Sind.

Karachi calls itself the "Bombay of Sind." A mere village at the beginning of the last century, it acquired no commercial importance till after the silting of the sands at the port of Shah-bandar on the Indus. But the sandbanks and shallows rendered it inaccessible to large vessels until an outer harbour was constructed at a vast expense east of Manora Point, sheltering the bay from southern gales. Thanks to these works, ships drawing 25 feet can enter the port at high water,

* Steamers on the Indus (1874), 13; goods imported, £1,108,000; goods exported, £604,000.

and even at ebb there are still over 20 feet on the bar. Still the harbour of Karachi can be maintained only by constant efforts to keep it clear of the alluvia from the Indus, which is carried along the north-west coast by the marine bore. Before the British occupation Karachi relied chiefly on the traffic in negro or Abyssinian slaves brought by the Mascat dhows from Africa. Now the chief articles of trade are cereals and cotton. Being an English-built town, Karachi owes its Eastern aspect chiefly to the glare of the sunshine and to the features and

Fig. 72.—Ruined Tope in the Khaiber Pass.

dress of the Hindus, Baluchis, and Afghans crowding its quays and caravanserais. *Clifton*, the English watering-place, lies east of the bay, on a rocky peninsula exposed to the surf and sea-breezes. Five miles farther north are the *Pir Mangho* hot springs, said by the priests to communicate by an underground channel with the Ravi, and whose waters are collected in a sacred tank full of crocodiles, who are carefully fed by fakirs. Beyond the heights overlooking Pir Mangho stretch the desert plateaux of Baluchistan, where the ruins and places bearing Hindu names

attest the former presence of Buddhist missionaries. Several points on the west frontier are marked by topes, none of which, however, are as large as those of the Khaiber Pass.

East of the alluvial lands of the Indus, Bikaner, Jaisalmir, and Marwar, the three Rajput states of the plains, present vast tracts unoccupied even by a single village. For hundreds of square miles nothing meets the eye except sandy dunes, salt pans, or stunted scrub, and here the desert is gradually encroaching on the cultivated lands. Marwar well deserves its name, which means "Land of Death," and the inhabitants of the two other states are even in still more wretched condition. Most of the villages are mere groups of hovels made of branches in the shape of beehives, and the natives are often driven to live on bark-bread, roots, or wild berries.

Nevertheless *Bikaner*, capital of the state conterminous with Panjab and Bahawalpur, is a considerable place, whose walls and temples, crowning the summit of an eminence, present from a distance a really imposing sight. Its inhabitants are noted throughout Rajputana for their stone, wood, and ivory carvings, carpets, rugs, and confectionery. *Jaisalmir*, built of a yellow stone, is also a picturesque town commanded by palaces, towers, and Jaina temples. *Jhodpur*, capital of Marwar, resembles Bikaner in its position and the bold appearance of its buildings. The citadel, which enclosed the maharaja's palace, stands on a sandstone mass rising 800 feet above the plain. Farther east the Godwar or "garden" of East Marwar supports a considerable population, being watered by numerous streams, which rise on the west slopes of the Aravali Hills, and either flow to the Luni or run dry in the desert. Here are *Nagar*, *Merta*, *Palli*, *Sojat*, and some other towns. Before the completion of the railway running across the Rajputana plateau between Ahmedabad and Delhi, Palli was the chief centre of the Marwar trade with Gujerat and the Ganges basin. The camels of this district are famous for their swiftness and endurance. Burton speaks of no less than fifteen varieties of this animal in Sind and the Thar desert. The Marwar cattle are also amongst the best in India. During periods of drought they are sent in hundreds of thousands to graze on the Rajputana and Malwa plateaux.

The petty dependent state of Catch, which describes a crescent round the south side of the great Rann, is better watered than the Rajputana principalities, and supports a proportionately larger population. *Bhuj*, its capital, which still bears the name of the snake-god to which it was dedicated, abounds in interesting archæological remains. But a more important town is *Mandvi*, or *Mandavi*, on the south side, at the entrance to the Gulf of Catch, which is the chief seaport between Karachi and Bombay. But vessels drawing more than 10 feet being unable to cross the bar, its 200 native craft are all of small size, with a total capacity of about 10,000 tons. Mandavi trades directly with Zanzibar, whence it imports ivory and rhinoceros hides. The vessels, mostly undecked, start in December and return with the south-west monsoon.

CHAPTER VII.

KATTYAWAR PENINSULA AND SLOPES DRAINING TO THE GULFS OF CATCH AND CAMBAY.—BRITISH AND NATIVE TERRITORY OF GUJERAT NORTH OF THE MAHI.

THE Kattyawar peninsula reproduces on a large scale the form of the island of Catch, and although not yet entirely surveyed, enough has already been discovered to show that the disposition of the rocks presents a certain analogy in both regions. The seaboard of both lies in the same direction from north-west to south-east, at right angles with the course of the wet monsoon, and the two coasts present the same monotonous aspect, varied only by the slight indentations of the creeks and nullahs from the interior. Kattyawar also has its crescent-shaped south coast, fringed in the same way by recent chalk cliffs and a belt of trap. Even the neck of land connecting it with the continent between the Rann and the Gulf of Cambay rises scarcely more than 45 or 50 feet above the sea, and the centre of the isthmus is occupied by the swampy and brackish lake or lagoon of Nal, about 100 miles long, and evidently the remains of an ancient strait. The soil is still strewn with shells of the same species as those of the surrounding seas. With every tide from the Gulf of Cambay the land is flooded to a depth of 28 or 30 feet, so that were these tides doubled or trebled in height the Kattyawar peninsula would be again reduced, like Catch, to its original insular character.

KATTYAWAR.

Kattyawar, which is considerably more elevated as well as larger than Catch, is traversed on the south side by the Gir chain, with summits 1,500 or 1,600 feet high, and culminates in the centre with the granitic Ujayanta or Revati, now better known by the name of Girnar, which has an extreme altitude of 2,800 feet. Other ranges of hills varying from 1,000 to 1,600 feet occupy the western parts, but the land falls gradually north and north-east towards the Rann and the plains of Gujerat. These plains, hemmed in between the gulfs and the plateau of Rajputana, are watered only by short streams, such as the Mahi and Sabarmatti, flowing from Mount Abu and the Malwa heights to the Gulf of Cambay. Two intermittent streams also reach the Rann of Catch in the rainy season. In this direction the

transition is very gradual from the fertile lands of Gujerat to the Thar wilderness, the desert zone everywhere advancing or receding according to the greater or less abundance of water.

In Gujerat the population is very unevenly distributed. The plains exposed on the south to the wet monsoon are most densely inhabited; but the northern districts, deprived of moisture by the central Kattyawar uplands, contain but few towns or villages.

Lying apart from the main historic highway, Kattyawar became the natural refuge of all the tribes driven from the plains of Gujerat. On the other hand, by projecting far seawards, the peninsula attracted trade and foreign settlers, who became diversely intermingled with the natives. Amongst these immigrants were some Arabs and even Africans, and the island of Diu on the south coast became a Portuguese settlement in 1535. These conflicting elements, who struggled for the possession of the peninsula, were unable to blend in one political group, and down to the middle of the present century the country was still divided amongst no less than two hundred and sixteen petty states. Under British rule these have gradually been reduced to one hundred and eighty-eight principalities, all differing in their political and administrative status. Some even are exempt from tribute, although none the less subject to the supreme jurisdiction of England.

Surashtra, the old name of the peninsula, is still current amongst the Brahmans and various native tribes. But it has been mostly replaced by that of Kattyawar, from a conquering people who penetrated from the north through the island of Catch during the thirteenth and two following centuries, when the Katti became the dominant power. These Katti, whether Aryan Kshatryas or Afghan tribes, traced their origin to the banks of the Indus, and were distinguished from the natives by their tall stature, more regular features, and lighter complexion. They became variously intermingled with the Jareja and other Rajput tribes, who had acquired fiefs in most of the Gujerat states. But the old populations held their ground, and still cultivate the land either as small holders or as labourers.

Inhabitants of Kattyawar.

Towards the east the Gujerat mainland north of the Mahi River is occupied chiefly by the Koli, who resemble the Bhils of the plateau, but who claim to belong to a higher caste, because they are more civilised and have been more assimilated to the Hindus. The Koli are divided into various clans according to their professions, some being tillers of the land or cutters of bamboo, others shepherds or water-carriers. The general name of the tribe which supplies numerous day labourers to the Bombay traders has at last come to be applied to all "coolies" of Indian and even Chinese origin employed by Europeans throughout the colonies. The Charuns, a Rajput tribe in Gujerat, were formerly supposed to enjoy the special favour of Siva. They were regarded as sacred, and any injury inflicted on them was sure to be avenged a hundredfold by the deity. Hence many made away with themselves, in order to draw down the divine vengeance on the families

of their enemies. In the districts infested by brigands they were employed as escorts to travellers, who were thus secured from all risk. But this occupation has ceased since civil war and pillage have been suppressed, and infanticide, formerly universal amongst the Jareja tribes, has also become very rare since it has been prohibited by the law.

Kattyawar, the refuge of many tribes driven from the mainland, also became the asylum of persecuted religions. Here Buddhism has left some of its most remarkable monuments, and has even been continued by the Jaina sects, who have mingled so many Buddhist practices with their Brahmanical rites. In the peninsula are found the largest and most famous groups of Sarawak or Jaina temples, and in this region whole cities are consecrated to the gods. A typical instance is Palitana, capital of a petty state crowning the twin crests of Mount Satrunjaya, in the south-east corner of the peninsula near the Gulf of Cambay. The city stretches to the foot of the sacred mountain, and is connected by flights of steps with the large temples on top. A few priests reside within the precincts, to keep the buildings in order, and to feed the pigeons, doves, parrots, peacocks, and squirrels which live on the bounty of the faithful. The Jainas are distinguished above all the Hindu sects by their zeal for building temples, where they do homage to their tirthamkaras, that is, to those who have crossed the abyss separating apparent life from absolute existence. On Satrunjaya edifices of this sort are counted by the hundred, dating from every epoch since the eleventh century, and forming collectively a magnificent architectural museum. New buildings are yearly added to the old, which they often rival in elegance and purity of style. Like the mediaeval guilds in the West, the Jainas take the greatest pride in decorating these temples, and whole generations have been successively employed in embellishing the porticoes and altars with rich carvings. In proportion to their numbers, amongst whom are many merchants and bankers, the Jainas possess more religious edifices than the other Hindu sects, which form the great bulk of the population in Gujerat. Here the Mohammedans are numerous only in the towns, while the Parsis are found only in isolated groups. The current speech is the Gujerati, one of the Neo-Sanskritic literary dialects least affected by Persian or Arabic elements.

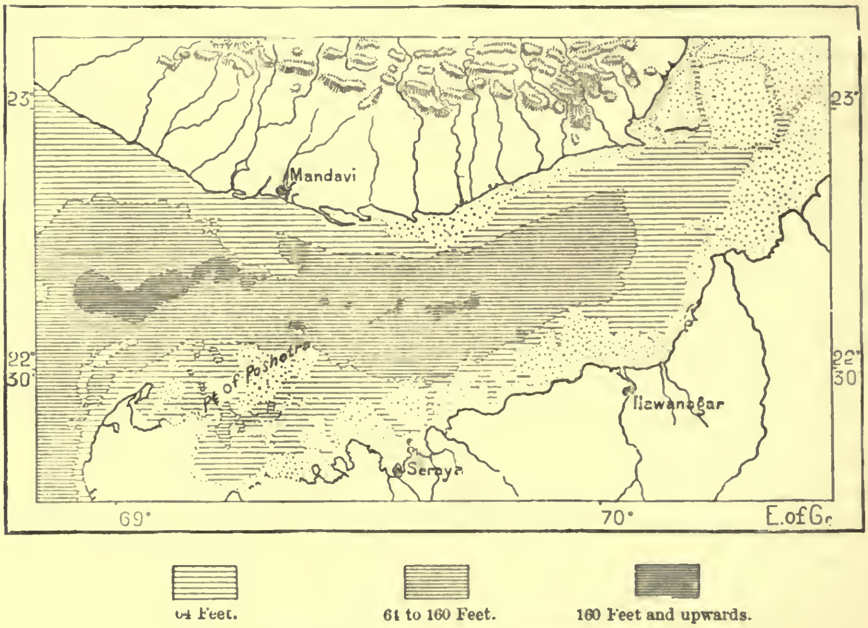
Gujerat is one of the richest countries in India, its prosperity being largely due to the sixty seaports fringing the coast, and to the fertility of its *regar*, or "black earth," on which cotton is chiefly grown. Horses, sheep, and grain are regularly exported to Bombay and other parts of India, although the crops are occasionally destroyed by a species of brown rat, which swarms at times in prodigious numbers. The people were decimated by famine in 1815, the "year of the rats," which seemed to spring like noxious weeds from the ground, and which neither fire nor water could extirpate.

TOPOGRAPHY.

Although Kattyawar is officially divided amongst a multitude of kinglets, the English have chosen as the general capital *Rajkot*, which occupies a central position

on the slope draining to the Gulf of Catch. Here they have established their military cantonments and founded a college, in which all the Gujerat princes are educated under the direction of European professors and officers. But this administrative centre is exceeded in commercial importance by several other places, such as *Nawanagar* (*Jamnagar*), close to the Gulf of Catch, noted for its dye-works. Better harbours might, however, be established farther west at *Seraya*, or *Poshetra*. Those of *Por-bandar*, *Mangrol* (*Mangalpur*), and *Verawal*, on the west coast, are all too small and exposed, although their numerous monuments show that they have for centuries enjoyed a considerable trade. Mangrol boasts of the finest mosque in Kattyawar, and near Verawal on the opposite side of the creek are seen the palaces, temples, and ruined mausoleums of *Somnath*, or Deo Pattan, the old capital dedi-

Fig. 73.—Gulf of Catch and its Ports.
Scale 1 : 1,700,000.

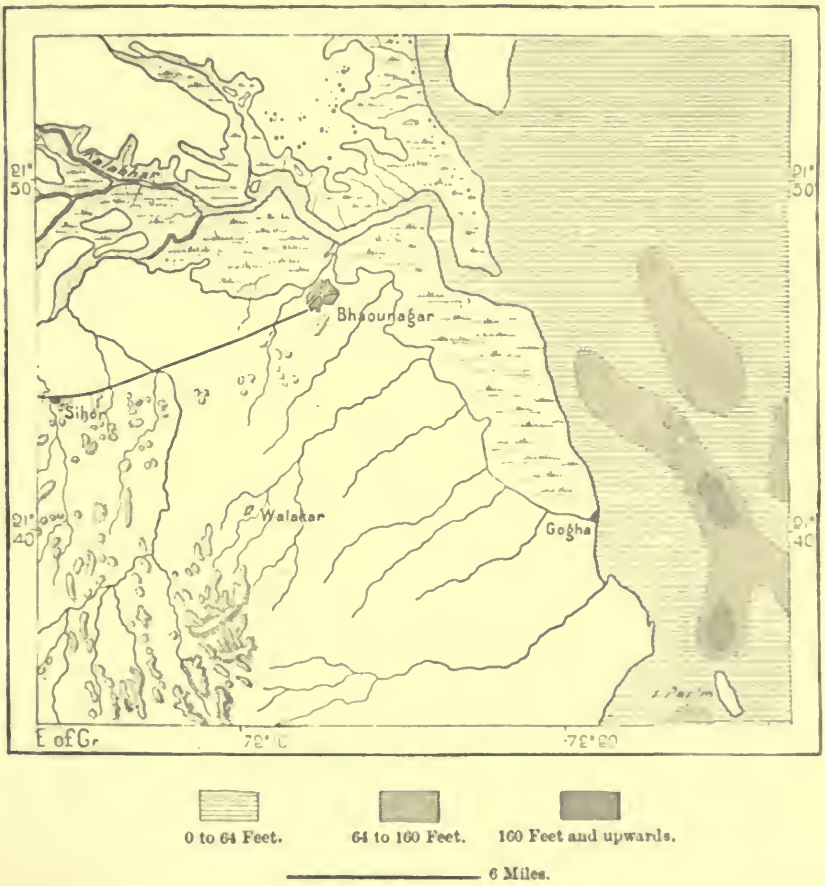


cated to Siva, which was captured by Mahmud the Ghaznevide in the first half of the eleventh century. From this place he carried off the famous gates, which the English claim to have brought back from Ghazni in 1842, although the authenticity of the trophy has been called in question. At Somnath, according to the legend, the body of Krishna was burnt at a place still shown near the confluence of three streams. About 18 miles from the coast stands the city of *Junagarh*, equally famous for its temples, some of which are cut out of the live rock. A terrace near the summit of the neighbouring Mount Girnar is covered with a city of Jaina temples, second in splendour and reputation to those of Palitana alone. One of the peaks of Girnar is exclusively inhabited by a tribe of fakirs dedicated to Kali, Goddess of Blood, who have become almost savages. They live on carrion,

and are publicly accused of having devoured the bodies of travellers. These rocks are also visited by men whom their parents have devoted to death, and who in fulfilment of the maternal vow hurl themselves from the summit of the red granite cliffs. On a rock at the base of the mountain is a famous inscription, in which over two thousand one hundred years ago King Asoka dedicated his states to the Buddhist faith. Another, more than two thousand years old, commemorates a victory gained over a king of the Dekkan; while a third, six hundred years more recent, records certain public works undertaken in the district. Unfortunately,

Fig. 74.—Bhaunagar and Gogha.

Scale 1 : 400,000.



these precious monuments have been partly destroyed by some engineers employed to repair the highway.

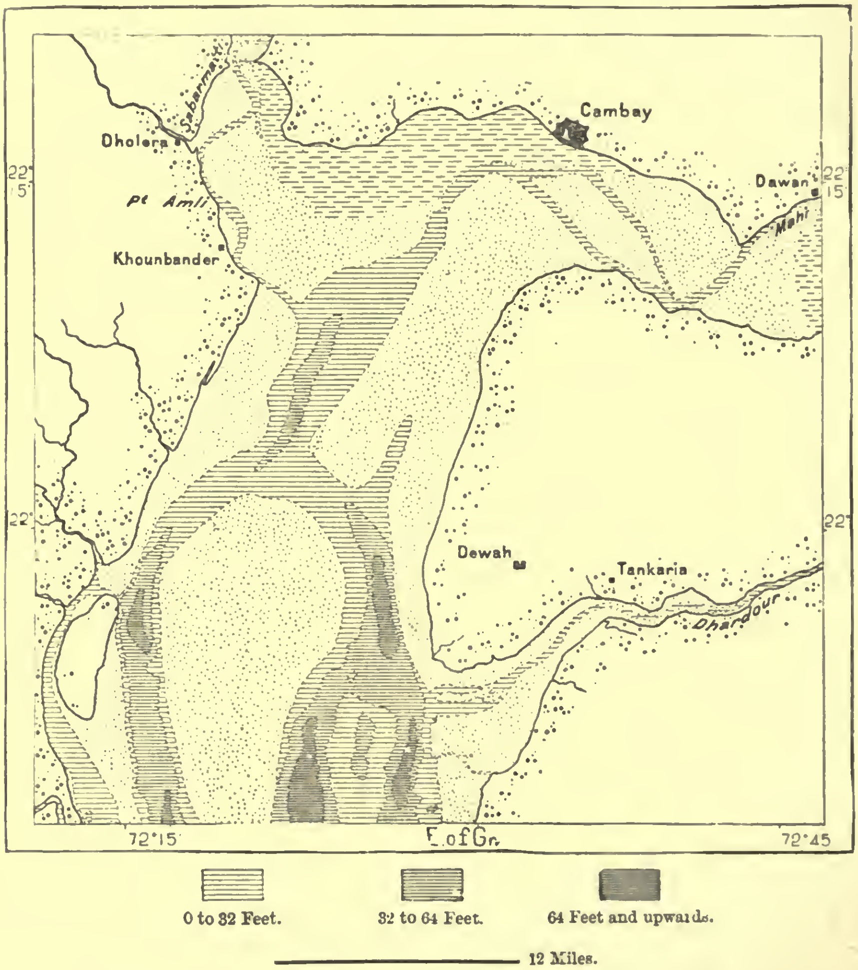
Diu, the Portuguese city associated with the great deeds of John de Castro, although greatly decayed, still occupies a convenient position on a small island at the southern extremity of the peninsula between the Arabian Sea and the Gulf of Cambay. Its port is accessible to vessels drawing 16 feet, but the territory is too limited to support a large trade. The natives are occupied chiefly with fishing and shipping, and occasionally migrate to Mozambique in search of fortunes. Not-

withstanding its fallen state, Diu still presents an imposing appearance, with its lofty citadel commanding the European and native towns at its foot. The Portuguese also possess the village of *Gogola* on the neighbouring coast. The colony has a total area of 12 square miles, with a population of 13,898 in 1876.

The little seaport of *Jaffarabad,* lying east of Diu, belongs to a prince of Abyssinian descent. It has lost much of its traffic since trade has been diverted to the

Fig. 75.—Northern Extremity of the Gulf of Cambay.

Scale 1 : 600,000.



west coast of the Gulf of Cambay. Here is the sheltered port of *Bhaunagar*, accessible to craft of light draught. The modern town is the capital of one of the largest states in Kattywar, and is noted for its enterprising spirit and the daring of its Lascar sailors. Heirs to the commercial prosperity of the neighbouring seaport of *Gogha,* or *Gogo,* whose roadstead is protected by the island of Perim, the inhabitants of Bhaunagar have constructed a railway to *Joraji,* in the centre of the peninsula, and to *Waddan,* thus connecting the place with the Indian system. Here

GATEWAY OF THE GREAT MOSQUE AT AHMEDABAD.

are also some cotton-spinning mills. *Dholera*, lying farther north, has given its name to a well-known variety of cotton. Due east of it stands the ancient but decayed city of *Khambat*, or *Cambay*, which gives its name to the gulf, and which is mentioned by Marco Polo. The dangers of the bar and violence of the tides no longer allow vessels to venture amid the shoals obstructing the north end of the gulf and the entrance of the rivers Mahi and Sabarmatti. Imposing ruins attest the ancient splendour of Cambay, whose chief industry now consists in cutting the carnelians and agates from the Western Vindhyas. The fertile tracts stretching northwards between the two rivers yield an excellent tobacco, which contributes to the wealth of the towns of *Kaira*, *Nariad*, and *Kapadwanji*.

Ahmedabad, metropolis of Gujerat, and, next to Bombay, the largest city on the western seaboard of India, has under British rule recovered some of its former prosperity. Founded, or rather rebuilt, at the beginning of the fifteenth century, it is said to have had a population of 900,000 at that time, when it exceeded in size the largest cities in Europe. Although subsequently wasted by wars, its favourable position in a rich plain, on the great historic highway, and at the junction of the route to Delhi by Rajputana, soon enabled it to regain its industrial and commercial activity after the restoration of peace. Some of its monumenst were overthrown by an earthquake in 1819, but there still remain some of the finest temples, mausoleums, palaces, and triumphal arches in India. Owing to the blending of Jaina and Moslem influences, the style of architecture of these buildings is altogether unique. The Hindu taste has generally prevailed even in the construction of the mosques, which, however, are free from the symbolism of hideous deities, with their hundred arms and animal heads. Standing mostly on terraces in the midst of thickets, they present a fine effect from the ramparts, which have been converted into public promenades. The British military station, lying 3 miles to the north, has been made attractive by its avenues of large trees and its beautiful gardens.

According to the local proverb, the prosperity of Ahmedabad hangs on three threads—those of cotton, silk, and gold. Although these threads have more than once threatened to snap, the inhabitants are still chiefly occupied with the weaving and embroidery industries. The raw silk is imported from Bengal, China, and Central Asia, and the woven goods exported to Bombay and Southern India. The local potteries are also the best on the west coast, and the paper more substantial than that imported from England. This ancient royal residence also excels in the manufacture of enamels, lacquer-ware, chased metals, and other artistic objects. Ahmedabad, having become the central station of the railway system, has rapidly become a great commercial mart, and its merchants, entirely independent of those of Bombay, have established direct relations with all the great markets of the world. By the railway, which connects it with the Rann through *Viramgam*, *Patri*, and *Kharagora*, and which is to be continued across the Rann of Catch, Ahmedabad has also become a chief depôt of the salt trade.

Ahmedabad is surrounded by several towns, of which *Dholka* is the largest, and *Patan* one of the chief Jaina centres. Here they have over a hundred temples,

besides libraries of books written on palm leaves, and jealously guarded by the priests. Towards the west, *Radhanpur* occupies an oasis near the spot where the Banas joins the Rann. Lastly, *Palanpur*, at the northern extremity of Gujerat, near the wooded slopes of Mount Abu, is the starting-point of the railway running across the Rajputana plateaux. Here the frontier tribes are kept in awe by the neighbouring military cantonments of *Disa*.

CHAPTER VIII.

ARAVALI AND VINDHYA RANGES.—SOUTHERN TRIBUTARIES OF THE GANGES.

Rajputana, States of Malwa, Gwalior, Bundelkhand, and Bhagelkhand.

MOST of the triangular space comprised between the Aravali Hills, the Jamna, and the long depression traversed by the Narbadah and the Son, consists of political states still enjoying a nominal independence. Lying beyond the great historic highways, these Medyadesa, or "Midland" states, remained for some time without any direct relations with the European conquerors of the peninsula. The rajas, protected by many natural obstacles, relied on their formidable strongholds and armies, which latter were the bravest and best organised in India. But although they have preserved an appearance of autonomy, the British Residents govern in the name of the rajas, many of whom are minors or women. The whole country has been divided into "Agencies," the administrative organisation of which corresponds to that of future provinces. Rajputana and the eastern districts forming the Central India Agency comprise over eighty petty states, often broken up into a number of detached fragments, like some of the Scotch shires. Recently, however, the Government has allowed the rajas to consolidate their states, by exchanging distant fiefs for others lying nearer to their respective capitals.

But while leaving the Rajput and Mahratta princes in possession of their thrones and of a large portion of their revenues, the English have acquired the direct administration of a strip of territory which traverses the whole extent of the plateaux from the plains of the Ganges to the Narbadah valley. Bombay is also now connected by two lines of railway with the cities of the Jamna and Ganges across the Rajputana and Malwa uplands, and one of these lines lies almost entirely within the British possessions. The political and commercial union of the States of the plateau with the Indian Empire is complete. Nevertheless, the peoples of these regions have preserved their distinct physiognomy amongst the inhabitants of India. In the general history of the peninsula their influence has always been considerable, although greatly inferior in numbers to the teeming populations of the plains. The Malwa uplands seem almost wildernesses when compared with the crowded regions of Audh and Bengal.

Mount Abu, Aravali Hills, and Vindhyas.

Towards the west the plateau is limited by the almost isolated Mount Abu, whose granite heights command the Gujerat and Marwar lowlands. This mountain is separated by the deep valley of the Banas from the Aravali Hills. But its upper portion is still extensive enough to form a plateau varied by smiling hills and pleasant vales. Thanks to the rain-bearing clouds arrested by the upper slopes, a rich vegetation has here been developed, forming a green oasis in the midst of arid hills and valleys. One of the depressions on the plateau is filled by the waters of the island-studded Nakhi-tal, or "Lake of the Precious Stone." The beauty of its position, rising in majestic solitude above the surrounding plains, has rendered Mount Abu one of the holy places of India, and its old name of Ar Buddha recalls the sage or god formerly worshipped here. The pure air of its atmosphere has also caused the village situated on this eminence to be selected as the British centre of administration for the whole of Rajputana.

The border range of the Aravali Hills begins in the vicinity of Mount Abu, stretching thence north-eastwards for a distance of 300 miles, beyond which a few isolated eminences indicate the direction of the main axis across the Jamna plains. The western slopes rise from 1,500 to 3,000 feet above the Marwar lowlands, whereas on the opposite side they are scarcely more than 800 feet high, and at many points even merge in the plateau itself. The character of the chain is also lost here and there, the crests being scarcely indicated, or forming a labyrinth of parallel ridges, in which it is impossible to distinguish the main axis of the system. Composed almost entirely of gneiss, syenites, schists, and other old formations, the Aravalis are mostly destitute of vegetation. Scarcely a bush is to be met on their slopes, which from a distance seem covered with snow, and in the evening are all aglow in the light of the setting sun, quartz veins of a slightly pink hue producing the same luminous effect as the glaciers of the Alps. Some of the intervening valleys exposed to the moist winds are occupied by lovely oases, while others are filled with sand or brackish waters. Thus Lake Sambhar, so named from a goddess whose statue stands on an islet, fills a depression of the Northern Aravali Hills, where the prevailing formation is Permian rocks abounding in salt. At the beginning of the present century this lake appears to have been 36 miles by 10 in the rainy season, but is now scarcely half that size and not much more than 3 feet deep. In August or September, after the rains, the water gradually subsides, until in June little is left beyond a muddy bed and a thick saline incrustation, coloured blue, red, or white, by the vegetable matter mixed with it. Masses of this impure salt are detached by the labourers of the Barrar caste engaged at the works, and forwarded to the Panjab, Rajputana, and the central provinces. The works are conducted for the benefit of the Rajput rajas, but under the control of the British Government, which has occasionally suspended this industry in the interest of the salt monopoly.

On the plateau stretching east of the Aravalis, the irregular surface is here and there studded with fresh-water lakes, but they are all artificial basins, whose

discharge is regulated by sluices. Such is Lake Debar, near Udaipur, which has a circuit of no less than 30 miles, and is consequently one of the largest reservoirs in the world.

The Malwa plateau, source of the Chambal and other affluents of the Ganges, slopes gently north-eastwards, while towards the south-west the plains of Gujerat are bounded by the abrupt scarps of border chains known by various local names. They form the transition from the Aravali Hills to the Vindhyas proper, skirting the north side, first of the Narbadah and then of the Son Valley. According to the old legend, these mountains made strenuous efforts to rival the Himalayas in elevation. But although the attempt failed, they none the less possess a vital importance as the transverse diaphragm of the peninsula and as an ethnical parting-line. The sandstone, schist, marble, and other azoic formations of the Vindhyas are amongst the oldest in India, and are connected eastwards with the gneiss rocks of Bundelkhand, geologically the most ancient in this region. The system stretches, in a series of ridges, for about 600 miles, from Gujerat to the frontiers of Bengal. Under the name of Kaimur, it occupies the peninsular space limited by the Ganges and Son Valleys, and terminating eastwards in a long plateau, whose surface is varied by numerous fertile depressions. The crystalline rocks of Bundelkhand are in many places surmounted by sandstone crests, themselves crowned by masses of lava. Most of these isolated blocks serve as foundations for formidable strongholds, where the feudal lords of the land have often defied the most powerful sovereigns. Although the Vindhyas contain rich argillaceous and mineral deposits, scarcely any mining works have been opened, except in the quarries of white and red sandstone. In Bundelkhand also the gravels brought down with the torrents from the Panna Hills are washed for diamonds.

The triangular plateau comprised between the Aravalis and Vindhyas has a general north-easterly inclination. Hence all the streams flow in this direction, nothing escaping from the southern scarps of the ranges except a few small nullahs, which reach the Narbadah intermittently. The Chambal, which is the chief river in Malwa, rises at an elevation of 2,000 feet, near a pass commanding a view of the Narbadah. The main stream, soon swollen by numerous affluents, descends through a series of cascades down to the Mokindura gorges. After its junction with the Banas it becomes a broad river, sending down more water in the rainy season than the Jamna itself, which it joins after a total course of 550 miles. Immediately below the confluence, the Sindh, another large tributary, reaches the Jamna at one of the most venerated spots in India. Still farther down, the Betwa, Ken, and Tons flow also from the plateau towards the Jamna and Ganges. But none of these rivers are much available for navigation, and are utilised chiefly for irrigation purposes.

Inhabitants—The Bhils.

The ethnical groups distributed into tribes and castes are extremely numerous in Rajputana and the other regions of the plateau and border ranges. Here the physical inequalities of the surface are reflected in the great diversity of its

inhabitants, amongst whom are some communities which have hitherto kept almost entirely aloof from the Aryan and Moslem invaders. These may be regarded as practically the aborigines of the country, their arrival being antecedent to all history and tradition. The Bhilla, or Bhils, for instance, are quite aware that they formerly possessed the fertile plains and valleys surrounding their present mountain fastnesses, and that they have been gradually driven into the more inaccessible parts of the land. Their very name is said to mean "proscribed," but it is uncertain whether they are of the same Dravidian stock as the populations of Southern India, or Kolarians, like most of the tribes of the plateau. Various usages still recall their ancient pre-eminence. At the coronation of the Rajput princes, a Bhil, representing the former rulers, marks the forehead of the raja with blood drawn from his thumb and great toe, thus transmitting to him the right of inheriting the supreme power. Most of the Bhil tribes, deprived of their former lands, and reduced to a state of barbarism, were long driven to brigandage as a last resource. The "Robbers of the Great God" established their dens on fortified heights, whence they swooped suddenly down on the Hindu villages and passing caravans. At the approach of armed forces they escaped by withdrawing from mountain to mountain, but also often showed a bold front to the smaller expeditions led by the Rajput princes. By a combination of stratagem and daring they have thus succeeded in preserving a large share of tribal independence. A portion of the Aravali Hills, Baghur, Kandeish, south of the Narbadah, and most of the upland valleys of the Vindhyas, are still occupied by Bhil tribes, enjoying self-government, on the condition of henceforth abstaining from plundering the neighbouring districts. Many also find scope for their warlike propensities by taking service in the Anglo-Indian army.

The full-blood Bhils are estimated at about a million altogether. They are generally of middle size, and of less symmetrical build, but more robust and active than the Hindus. The complexion is nearly black, the nose very flat, eyes perfectly straight, cheek-bones slightly prominent, hair long and lank, with sparse beard, growing in small tufts on the chin. The usual dress is a simple loin-cloth, and they go about still armed with the spear, dart, and bow. Although they cultivate the land, their favourite pursuits are fishing and hunting. They imitate the cries of animals with great skill, and are thus able to signal to each other without arousing the suspicion of strangers. There are no castes, but the authority of the chiefs named by the elders is universally acknowledged. Their religious practices date mostly from pre-Aryan times. They sacrifice animals to the sacred trees, sprinkle blood on the rude altars raised by the wayside, or smear them with red ochre, another symbol of life. In gratitude to the metal which supplies them with arms and implements of industry, they hang the branches with iron spear-heads or fragments of ploughs, to which they make offerings. Amongst the deities of the Brahmanic mythology, they pay most respect to the Ape-god Hanuman, as if he were regarded as representing the old dispossessed races. After the suppression of a recent revolt the British authorities have consented to abolish half the taxes, to appoint no police-stations in the country, and prohibit the Mohammedans from

entering certain sacred villages. By one clause of this curious treaty, they also engage not to compel any Bhil women to be weighed.

The Bhils have been diversely mingled with the surrounding populations, and various groups have thus been developed, which form insensible transitions to the civilised peoples of the plains. The Mhairs or Mugri, occupying the northern Aravali Valleys, are usually regarded as forming a distinct nationality, numbering from 300,000 to 400,000, and giving its name to the Mhairwara district. But most of them present the same type as the Bhils, whom they also resembled in their usages until they became gradually assimilated in this respect to the Hindus. Like the other wild tribes of the hills, they were formerly known as *palita*, or "people of the pal," or fortified enclosures, within which their dwellings were scattered about. But under the direct administration of the British most of the Mhairs have abandoned their "pals" and settled in the valleys, where roads have been constructed, and reservoirs formed at favourable points for irrigation purposes. They now call themselves Hindus, and practise the Brahmanical rites, but with so little zeal that those even of the higher castes eat flesh and drink fermented liquors.

The Minas, another "palita" community, have departed still more from the aboriginal type. Scattered over the Jaipur territory, between the Aravali Hills and the Jamna, and especially in the valley of the Banas River, they have become intermingled with the Jat peasantry, whose dialect they speak, and whose usages they have adopted. They are said to number upwards of 200,000.

The Rajputs and other Hindu Elements.

The Rajputs, who have given their name to one of the plateau formations, as well as to the lowlands lying west of the Aravali Hills, are probably immigrants who arrived subsequently to the first Aryan invasion. Although claiming descent from the warlike Kshatrya caste, and tracing the cradle of their race to the sacred Hindu city of Ajodhya, on the Gangetic plains, they are connected only in an indirect way with the true Kshatryas. Driven from the banks of the Ganges towards the plateaux, they did not occupy the Malwa district till the period from the tenth till the twelfth century of the vulgar era. All the tribal chiefs became Rajputs, "sons of one father;" but many amongst them, claiming descent from a cow or a snake, are either Bhils, Gonds, or of some other aboriginal stock. Their valour and success in arms soon ennobled them in the eyes of the local Aryans, and in most of the states the "Sons of Kings," as the term Rajput really means, take precedence, if not by right, at least by might, over the Brahmans themselves. Nor can there be any doubt that they soon contracted alliances with the old Hindu families. There is scarcely a royal house in India unconnected with the Rajputs, and in several parts, but especially in the Himalayan valleys, the reigning families take the title of Rajput Kshatryas. But, however widespread throughout the peninsula, the Rajputs nowhere constitute the majority of the population, and are numerically important chiefly in Mewar and the Northern Rajputana States.

Since the period of the invasion the "thirty-six" *Kula*, or royal races, sprung

of the Sun and Moon, have maintained their division into *sacha* (tribes), *gotra* (clans), and *campa* (sub-clans), all distinguished by special traditions. In the north and north-west the most numerous are the Rahtor, descended from the *raht*, or "backbone," of India, and often known as the "Fifty Thousand Swords." In the Thar oases of the west are grouped the Bhatti; in the north-east, the Kachwhala; in the east, the Chauhan; and in Bundelkhand, the mixed Bundela tribes. Mewar, in the south, is the home of the Sasodia, who claim to be the purest of all the Rajputs, as the direct descendants of Rama, hero of the Aryan epic poems. The rana, or "great king" of Udaipur, is venerated by all Hindus as the representative of the ancient solar race. Although far inferior in power and wealth to many other native rulers, he is still a "Sun" among kings, and of all rajas he alone is at once priest and sovereign. The marriage of the secondary rajas with his daughters formerly constituted the only political tie between the different royal houses; nor would he ever deign to honour even a Mohammedan emperor of Delhi with the hand of a royal princess, in return for titles, treasure, or territory. At royal assemblies he takes precedence, and all Rajputs regard him as an infallible judge in matters of etiquette, rank, and points of honour—things held by the "Sons of Kings" in far greater esteem than questions of doctrine or religious rites.

Notwithstanding their adoption of Brahmanism, the Rajputs display, as a rule, little zeal for the Hindu deities, but they still venerate the Sword, the goddess who led them to the conquest of India. Soldiers above all, their only care is to keep the subject races under control. As sons of conquerors, all are noble, and even the poorest amongst them maintain a certain equality in their relations with the rich. Mostly tall, well made, handsome, and of haughty carriage, they still present the appearance of true rulers of men amid the surrounding races. They fight only on horseback, preceded by banners and other martial circumstances. Their women have the reputation of being great coquettes, and extremely fond of finery.

The warlike Rajput tribes, proud of their royal blood, have preserved many customs which recall the feudal times of the West. In most of their States the land is divided into fiefs, whose holders dispose absolutely of the crops, merely paying the sovereign personal homage and military service in time of war. On state-days the vassals, with their traditional emblems—peacock, lion, or other animal—rally round their chief, at whose side stands the family minstrel, singing his ancestral glories, his battles, loves, and splendour. He also consults the stars, casts lots, and is the bearer of challenges or friendly messages. The chivalrous Rajputs certainly equalled the paladins of the West in their heroic devotion to the fair sex. "It is the part of man to perform great deeds, of woman to inspire them," was a sentiment which they shared with the knights of the Courts of Love. They also faced death to recover a flower or a favour, or engaged in tournaments, or even battles, for the prize of a bracelet. A persecuted princess sends a ring or some other symbol to her champion, and the flame of war is at once lit up among the rival tribes. Even still no marriage is concluded until the betrothed sends to the bridegroom a cocoanut, emblem of her choice, or places a wreath of flowers around

his neck. Once a wife, she takes the title of "divine," and the husband undertakes nothing without consulting her. The reciprocal duties are those of mutual fidelity till death, with the reserve that the wife alone mounted the fiery pyre at the death of her partner in life. The history of Rajputana is little more than a long series of wars undertaken for the "Helens" of India. The last great event of this sort, before the English conquest, was concluded by the murder of the princess for whose hand the great feudatories were contending.

Marriage always began by an elopement. Being strictly exogamous, the Rajputs could not marry within their own clan; hence they took, and still take, their wives from another tribe, either by real or simulated force. But in their excessive pride of race they were reluctant to contract alliances with men of inferior birth, while, on the other hand, these events were accompanied with so much display that whole fortunes were often dissipated. The only means of avoiding this double danger was female infanticide, which practice had become universal before its suppression through the influence of the British Residents. According to a report published in 1818 by a Bombay literary society, scarcely sixty girls had survived amongst eight thousand families in one Rajput district. The only tribe that had remained faithful to human instincts were the Moslem Sodas, who had consequently long acquired a sort of monopoly in supplying wives to the noble families of Catch and Rajputana. The women of this tribe having a great reputation for beauty and intelligence, the chiefs of the remotest tribes eagerly seek them in marriage, offering as much as £1,000 purchase-money.

The almost complete dearth of women amongst the Rajput tribes of the plateau gave rise to a large number of half-castes, Rajput on the father's, Bhil, Mhair, or Mina on the mother's side. Amongst these half-breeds the customs and institutions were the same as amongst the pure Rajputs, and infanticide, as well as human sacrifices, were till recently practised by them. Down to the year 1833 a Rajput and Bhil half-caste was immolated every time the Rana of Udaipur prepared to cross a river. The blood of the victim, mingling with the stream, was expected to satisfy the evil spirits, and divert their wrath from the head of the sovereign. Some of these mixed tribes are nominally Mohammedan, although their conduct is regulated less by the laws of Islam than by the national usages. Opium, one of the chief crops on the Malwa plateau, is the great scourge of the inhabitants.

Besides the Rajputs and aborigines, all the other Hindu races are represented in this region. The Brahmans are very numerous, and one of their families has been entrusted with the custody of the archives of the Rajput nobility. Trade is chiefly in the hands of the Jainas, and in the north the land is tilled by Jats and Gujars. In the east the peasantry are also Hindu immigrants of various castes, and in the south the Kumbi, Sudia, and Koli, or Kuli, have penetrated from the Gujerat lowlands. The Grassia caste, which claimed the privilege of ransoming all travellers, is represented by a few tribes in Malwa as well as in Gujerat, and there are also the Charuns, descendants of those guides and protectors who guaranteed the life and property of all entrusted to them. Before the opening of roads and railways, all the traffic of Rajputana and Malwa was carried on by the Banjari,

a nomad caste whom many have identified with the European gipsies. They are distinguished above all Hindus by their strength, handsome appearance, and activity, and they are grouped in tribes or bands of escorts to caravans, whose only home is the public highway. From time immemorial these Banjari, Gohar, or Lambadi have been charged with the transport of supplies, and as distributors of corn they have acquired an almost sacred character. Their convoys, often comprising several thousand oxen, are preceded by a bull, the god of the herd, decked with ribbons and ornaments. To him are brought the sick, to recover their health, and in his presence the marriage tie is made binding. Such was their reputation for honesty, that the Banjari had only to attach the invoices of their goods to the horns of the oxen, in order to pass freely through the hands of the custom-house officers at the entrance of the towns.

Topography.

In these States, where the outward forms of the feudal system have been preserved, the cities have retained their warlike appearance, like those of mediæval times in Europe. All are the capitals of kings or princes, grouping their houses on the slopes of a hill, or round some isolated crest crowned by the frowning walls and towers of a castle. The picturesque buildings of this citadel seem to have more importance than all the rest of the city, which usually consists of a chaos of hovels, interspersed with a few temple domes. Nevertheless, since the pacification of the land, many feudal lords have come down from their strongholds, and built themselves palaces on the hill-side, or even on the plain, in the midst of verdant parks, or on the banks of the sacred tanks. The suburbs, like the central parts, are grouped round the residence of the chief, while on the plains themselves the glory of the Rajput princes is commemorated by the little *Chathi*, or domes supported by columns, which mark the spot where their bodies were formerly consumed, together with their devoted wives and slaves. The Rajput architecture presents in its *ensemble* an original character. Far from being mere copies of the Panjab, Delhi, or Gujerat buildings, the Rajputana palaces have a style of their own, combining the simplicity of grand lines with the elegance and finish of the details. A special feature of this architecture is the crescent-shaped eaves encircling the upper part of the windows, or fringing the base of the domes.

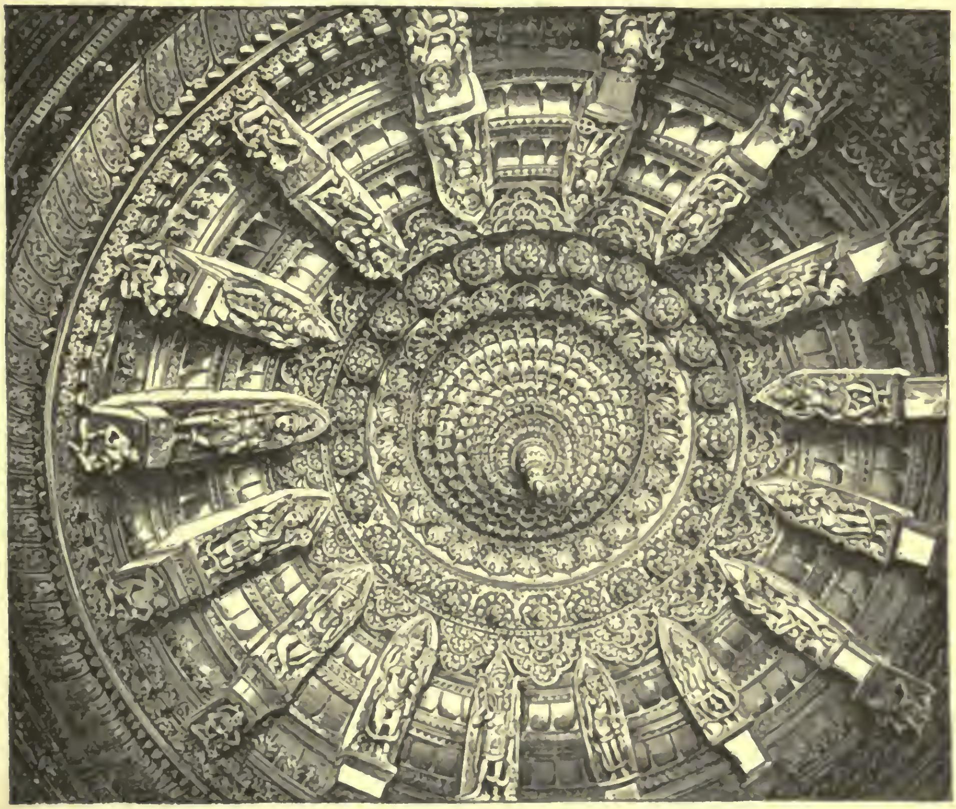
The small town of *Mount Abu*, summer capital of the British administration, is one of the most famous for its architectural splendours. The Jaina temples of *Dewalra*, lying a little over a mile to the north of the English station, are conspicuous for their rich sculptures. Two especially, built of white marble between the eleventh and thirteenth centuries, are marvels of ornamental work, unsurpassed for the delicacy of their stone carvings. *Chandravati*, one of the first cities in the peninsula, stood formerly on the plain to the south-west of Mount Abu, but the site of its ancient temples and palaces is now marked only by heaps of rubbish. *Sirohi*, capital of a petty Rajput State famous for its manufacture of arms, occupies a spur to the north of Mount Abu, and close to the desert stands the British outpost

INTERIOR OF A JAINA TEMPLE ON MOUNT ABU.

of *Erinpur*,* guarding the frontier towards Marwar. One of the highest crests of the Aravalis is crowned by the fortress of *Kumulmir*, a vast accumulation of bastions, towers, temples, and palaces, the whole surmounted by the Badulmahal, or "Palace of Clouds," at an altitude of 3,400 feet above the sea.

Udaipur, the present capital of Mewar, lies farther east, near the source of the Banas, and at some distance from the Rajputana Railway. The "City of the Dawn," as its name means, is a comparatively modern place, dating only from the latter half of the sixteenth century. But it boasts of the largest and most sumptuous palace in India. Built of marble and granite, resting partly on arcades,

Fig. 76.—Mount Abu—Ceiling of a Jaina Sanctuary.



this magnificent pile, with its terraces, pavilions, and gardens, is reflected in the waters of an artificial reservoir supplied by the river Banas. In the neighbourhood is *Ahar*, the city of the dead, occupying the site of an ancient capital. Here are deposited the ashes of the "Sun-Kings," beneath marble domes between richly sculptured columns and balustrades. In the north-east of Mewar, and on the banks of the Banas, are the ruins of the marvellous *Chittor*, which was long the residence of the Susudia sovereigns. Thomas Roe, English ambassador at the Court of the Great Moghul early in the seventeenth century, states that in his time this place contained one hundred thousand stone houses. The old citadel crowned the summit

* So named by some patriotic son of Erin, as mentioned in Glardon's "Journey to the East Indies."

of a narrow ridge, 3 miles long, and rising from 300 to 400 feet above the surrounding plain. Amidst the rank vegetation there still stand three hundred temples, palaces, columns, and tombs in a good state of preservation, forming a striking contrast with the wretched hovels of the present inhabitants. Chittor, "built by the great Indra himself," is altogether a labyrinth of monuments, all remarkable for their fine proportions and exquisite details. But absolutely unique is the Khirat Khumb, or "Tower of Victory," erected by King Khumbu at the beginning of the sixteenth century. It forms a prism, 120 feet high and 32 feet broad, divided into nine columnar storeys, which are separated one from the other by sculptured friezes, and surmounted by a sort of tiara. The stone face of the monument is covered with thousands of statues in relief.

Tulati, at the foot of the Chitt, or rock, has succeeded the ancient capital, but is a place of no importance. The commercial activity of the country, formerly centred

Fig. 77.—Plateau of Mount Abu.
Scale 1 : 64,000.

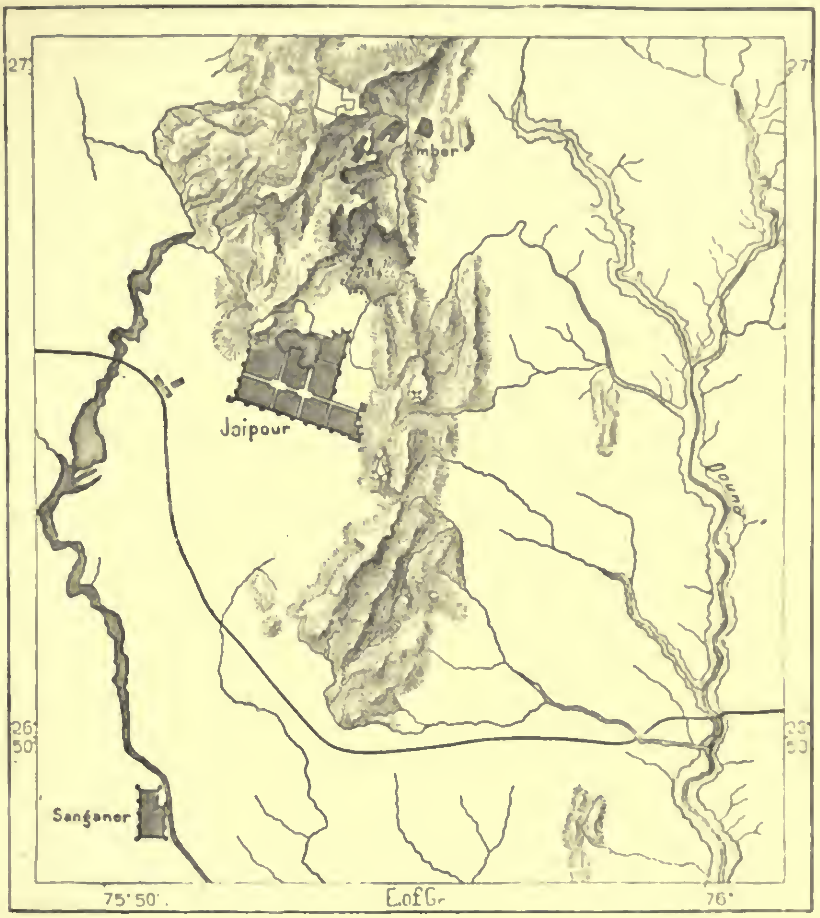
2,200 Yards.

in *Bhilwara*, north of Chittor, has been attracted southwards to the British military station of *Nimach*, central cantonment for the Rajput States between the Banas and Chambal Rivers. In the Aravali region the chief place is also an English station, the ancient *Ajmir* (*Ajamida*), now capital of the British enclave of Mhairwara, and converging-point of the three railways traversing Rajputana. Like its neighbour *Nasirabad*, it is a city of bazaars, and some of the palaces recently built here by the Jaina merchants in the florid Rajput style rank with the finest in India. The few ancient monuments of Ajmir are worthy to compare with those of Chittor, and amongst the rural attractions of the vicinity is the "Garden of Splendour," where the Moghul emperors erected a castle, now residence of the British governor. On the verge of the desert, 9 miles farther west, lies the famous sacred Lake Poshkur, one of the most frequented places of pilgrimage in the penin-

sula. It is surrounded by temples, pavilions, turrets, galleries, and white marble ghats, while older buildings are seen below its present level. Ajmir is the literary city of Rajastan, and the British Government has here founded two of the most important scholastic establishments in the Empire. One of these is the Mayo

Fig. 78.—Jaipur and Amber.

Scale 1 : 210.000.



6 Miles.

College, exclusively reserved for the sons of rajas, who are here instructed by European teachers.

Although only the capital of a petty dependent State, *Jaipur* is one of the largest cities on the plateau, and calls itself the "Paris of India," claiming to be the most elegant and best-regulated place between the Indus and Ganges. Dating only from the year 1729, it lacks the picturesque appearance of the older capitals of Rajastan, but it is disposed in regular blocks, by broad streets running at right angles, and flanked by granite or marble houses. But there are no fine buildings, and the palace is a mere aggregate of tasteless edifices standing in the midst of

lovely grounds. But some remarkable monuments are found at *Amber*, 4 miles to the north-east on the east slope of the Kali-kho, or "Black Mountains," and connected with the modern city by fortified lines. Formerly the "Universal Mother" and "Queen of the Mountains," Amber is now abandoned to the fakirs and monkeys, while nature has formed a green setting to its gilded domes and many-coloured pavilions. Magnificent palaces, some in ruins, others still standing, are also met in *Alwar*, *Dig*, and *Bhartpur* (*Bharatpur*), which lie farther north, near the plains of the Jamna, and which combine to make Rajastan the Promised Land of Art. The fortress of Bhartpur, after long resisting the English, was finally reduced by an army of 25,000 men in 1826.

Scarcely less rich in monumental structures is the Chambal basin to the east of Rajputana. *Mandu*, one of its now forsaken cities, is unrivalled for its vast extent and picturesque position on a southern spur of the Vindhyas, which rises 1,600 feet above the deep valley of the Narbadah. Mandu has a circuit of no less than 36 miles, and covers twice as much ground as Paris; but within the ramparts nothing now remains except a small hamlet lost in the jungle. A few Bhil savages and religious mendicants are the only human inhabitants of what was once the capital of Malwa, whose overgrown ruins are now tenanted by the tiger, leopard, and bear. Nevertheless, there still remain some fine edifices, palaces, mosques, and especially *baoli*, or storied colonnades, carried down the rocky walls of the mountain to the level of the running waters. During the first half of the sixteenth century Mandu lost its rank as capital of Malwa, and although the Moghul emperor Jehanghir resided here for a brief interval, it was finally abandoned after being wasted by the Mahratta freebooters. Its marbles are now converted into lime for the buildings of *Dhar*, a small territorial capital lying farther north on an affluent of the Chambal.

The modern town of *Indore* is at present the most flourishing place in the Upper Chambal basin. Capital of one of the most powerful native states on the Malwa plateau, it has become the centre of the opium trade.* Here is one of those royal colleges where the heirs to the native thrones are instructed in the art of wise government under British control. *Mhao*, or Mhow, one of the largest military stations in India, lies a little to the south of Indore, and is connected by rail with Nimach and Nasirabad, the chief British cantonments in Rajputana. This line, constructed mainly for strategic purposes, leaves to the right the most important city in the country, the famous Ujjain, one of the "seven holy places" where reigned the renowned Vikramaditya, the date of whose birth forms the starting-point of the Hindu era. It was through Ujjain that the Indian geographers traced their first meridian, which ran thence southwards to Lanka (Ceylon) and northwards to Mount Meru. The ruins of the old city are scattered over the gardens to the north of the present enclosure, although a gate is still shown near the palace which is said to have formed part of Vikramaditya's castle. Of the great temple of *Barolli*, on the Middle Chambal, nothing remains except a few wonderful fragments, amongst which are some columns whose shafts are formed by four female

* Value of the opium consigned in 1878 to the British Government—£1,045,000.

JAIPUR—VIEW TAKEN IN THE HIGH STREET.

statues. Farther west lies *Bundi*, residence of a Rajput raja, and overshadowed by a group of palaces rivalling in beauty those of Udaipur.

In this part of India the most considerable native State is that governed by the dynasty of the Sindhias, descendants of the Mahratta "slipper bearers," who overran Northern Rajputana. Their capital, *Gwalior*, lies close to the plains of the Jamna between the Chambal and Sindh River valleys. Above the city, or rather the twin cities, rises a sandstone rock about a mile and a half long and 300 yards wide,

Fig. 79.—Gwalior and Morar.
Scale 1 : 300,000.

which commands the whole country for a distance of over 60 miles in every direction. Of all the isolated crags scattered over the land, crowned each with a fortress, not one was so well suited for the construction of a vast citadel, and the works of all kinds piled up at this spot show that the natives were at all times alive to its strategic importance. They were no less struck with the singular beauty of these precipitous white cliffs standing out amidst the verdure and pigmy dwellings of the plain. Colossal figures of Hindu divinities hewn out of the live rock attest their veneration for this hallowed spot. Since the eighth century of the vulgar

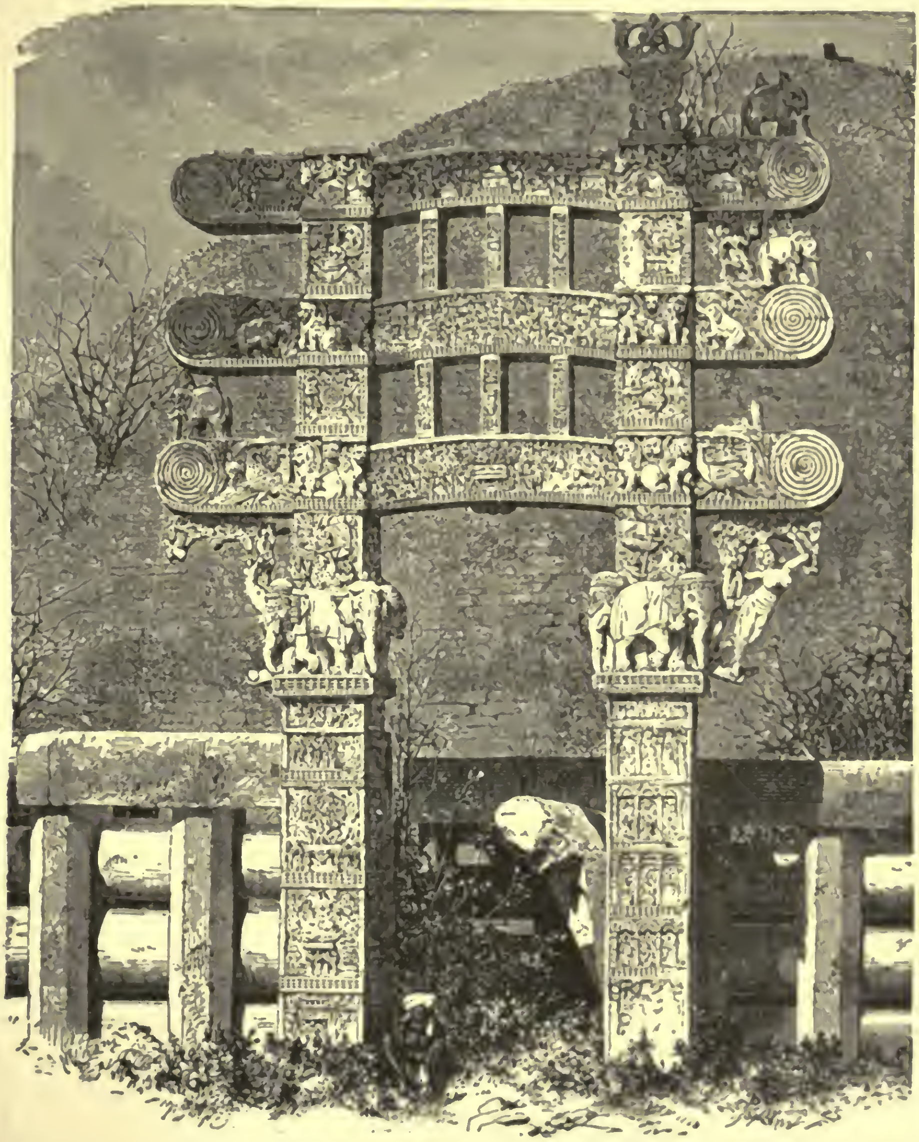
era the stronghold of Gwalior has been one of those for the possession of which the masters of India have most fiercely contended. In these latter times the English, after having twice stormed the rock, have added greatly to its defensive works. A portion of the summit is crowned by a magnificent palace, dating from the grand epoch of Hindu art at the close of the fifteenth and beginning of the sixteenth century, and connected with other buildings which, with their gables, towers, domes, terraces, colonnades, and sculptured façades, form the most picturesque group of edifices in India. Jaina and other Hindu temples of various epochs also form part of the vast architectural museum of Gwalior. Even in the interior of the rock about a hundred excavations of all sorts contain curious Jaina sculptures, amongst which is one no less than 55 feet high. The British military town of *Morar*, lying on the plain about 4 miles east of Gwalior, keeps watch over Sindhia's capital. Towards the south-east British cantonments have also been established near the cities of *Dhatiya* and *Jhansi*, both of which are commanded by rocks crowned with ancient fortresses. On a hill 6 miles north-west of Dhatiya stand the four-and-twenty Jaina temples of the *Sunagarh*, or "Golden Castle," dating from various epochs subsequent to the twelfth century, and all differing from each other in their style. The line of the horizon is thus broken by hundreds of domes, *shatryas*, spires, clock-towers, and bulging cupolas like those of the Russian churches.

Travellers are attracted to the valley of the Upper Betwa by monuments of more ancient date than those of Gwalior. Here are the most complete and interesting remains of Buddhist architecture in the peninsula, some of which are altogether unrivalled for the delicacy of their sculptures. Between the two cities of *Bhopal* and *Bhilsa* stretches an almost uninhabited region, in which are grouped about sixty distinct Buddhist topes, rediscovered, so to say, by some English travellers in 1822. These "Bhilsa topes," as they are called, were by no means the largest raised by the Buddhists, for several others are mentioned of far grander proportions. But those strewn over the plains, or erected along the military highways, could scarcely escape destruction, whereas the Bhilsa mounds, lying off the great routes, in the midst of savage populations, remained for centuries sheltered by the jungle. The chief tope is that of Sanchi, which forms a semicircular dome over 300 feet in circuit, pierced here and there by narrow openings now overgrown with shrubs. The outer terraces are strewn with the débris of richly sculptured pillars, but much still survives of the stone enclosure. Two of the entrance porticoes are still standing, and one of them is almost intact, with its marvellous series of carvings, representing elephants, lions, chimæras, gods, and divine emblems, besides valuable historic records, religious and civil ceremonies, scenes illustrating local usages, the whole popular life of Buddhist India over two thousand years ago. The Sanchi porticoes, evidently imitated from old squared timber prototypes, are found in a scarcely modified form in China, and especially in Japan. They are the so-called *toriyi*, such as those standing at the entrance of the Naitsi temples, which, but for the Bhilsa monuments, might be referred to a local Japanese or else to a Polynesian origin. Amongst the numerous antiquities of the Bhilsa district there

are some, such as the sculptured grottoes of Udghiri, which are associated with cults different from that of Buddha.

The triangle formed by the Ganges and Son east of the Betwa contains several capitals of British districts or of native States, either commercially important or else possessing some of those beautiful structures which, in any other country less

Fig. 80.—East Gate of the Sanchi Tope.



rich in grand monuments of the past, would suffice to render them famous. *Sagar*, one of the great military stations of the Central Provinces, has several temples, while *Chatarpur* groups its houses, paper-mills, and other factories round the ruins of a palace. The decayed city of *Kajraha* still contains 18 perfectly preserved yellow sandstone temples, marvels of sculpture. *Naogaon* (Nowgong), the military

cantonment of Bundelkhand, has developed a considerable trade. *Pannah* and several other places work the diamantiferous gravels mostly lying several feet below the surface, and yielding diamonds to the yearly value of £60,000, which are forwarded chiefly to the Allahabad and Benares jewellers. West of *Rewah*, which has some coal mines, Cunningham and Beglar discovered in 1872 the remains of the *Bharahut* tope, the balustrade of which is covered with figures illustrating events in the life of Buddha and local social customs. Almost every stone bears an inscription, so that no other ancient monument has been more useful in reconstructing the history of the first Buddhist ages.

CHAPTER IX.

THE GANGES BASIN.

DELHI; NORTH-WEST PROVINCES, EXCLUSIVE OF KUMAON AND GARHWAL; RAMPUR; AUDH, BEHAR, LOWER BENGAL, WEST OF THE BRAHMAPUTRA.

THE elongated plain following the foot of the Himalayas, from the Jamna and Ganges "gates" to the alluvial Sanderban district, is about the size of France, but far more densely peopled. Here are concentrated nearly 100,000,000 persons, which at the same proportion would give for the whole of Asia about 25,000,000,000. Yet this region is far from being entirely under cultivation. The *usar*, vast tracts lying above the level of high water, and thus deprived of irrigation, are mere solitudes covered with *reh*, a saline efflorescence resembling snow at a distance. The riverain districts also are often interspersed with irreclaimable lagoons or morasses, while in the low-lying region of the great delta much consists of half-submerged lands entirely unsuited for human habitations. Altogether the country is still far from being adapted to the wants of its occupants, and more than once in recent times disastrous famines have resulted from defective irrigation. On the other hand, a succession of good harvests causes a rapid increase of population, estimated at about one million annually in the Bengal presidency during the ten years between the returns for 1871 and 1881.

THE GANGES CANAL AND LOWER GANGES.

At Hardwar, where it enters the plains, 1,000 feet above sea level, the Ganges, or Ganga, that is, the "River" in a pre-eminent sense, is already a considerable stream, formed by the junction of the Alaknanda and Bhagirati, flowing from Mount Moira and other Central Himalayan crests. Although over five-sixths of the mean discharge is diverted to the navigable and irrigation canal, which ramifies through the doab, enough remains to allow light craft to ascend as far as the Hardwar gorge. This great canal, which again joins the river at Cawnpore, after having fertilised a space over 7,000 square miles in extent, is the grandest work of the kind ever constructed. The main channel has a length of 300 miles in a straight line, and at the first lock the mean discharge is 8,000 cubic feet per second, or

about four times that of the Muzza in the Po basin, which is the largest irrigating canal in Europe. The main branch alone, apart from its numerous ramifications, required a displacement of earth about equal to that of the Suez Canal, or upwards of 2,450,000,000 cubic feet altogether. At Rurki, near Hardwar, have been constructed the chief workshops, the principal lock, the basins, and the college of the engineers by whom this great undertaking has been carried out.

After its junction with the canal, and farther on with the Jamna, the Ganges impinges near Chanar on the last escarpments of the sandstone hills belonging to the Vindhya system. But beyond this point it flows henceforth in an easterly direction as far as the breach opened by the united Brahmaputra-Ganges waters

Fig. 81.—Canals of the Gangetic Doab.
Scale 1 : 8,500,000.

180 Miles.

between the Rajmahal and Garro Hills. Above this breach the Ganges is joined by all its great tributaries—the Gogra or Sarju, Gandak, Baghamati, and Kosi from the Himalayas, the Son from the Amarkantak uplands in the Vindhyas. This southern affluent, which flows through a depression forming a north-eastern continuation of the Narbadah Valley, differs greatly in its character from the northern feeders. While these send down a considerable volume throughout the year, the Son is occasionally almost completely exhausted during the dry season. But after the tropical rains its discharge is sometimes equal to that of the Ganges itself, the flow thus oscillating between 600 and 1,720,000 cubic feet per second.*

* Hunter, "Imperial Gazetteer of India."

At low water the river bed, at some points several miles wide, is occupied by dunes shifting with the winds, and rendering the passage extremely difficult for travellers. But it is now crossed by a railway bridge 1,380 yards long, in 28 sections, and resting on piers sunk 33 feet into the ground, altogether one of the grandest engineering triumphs of modern times, the execution of which occupied no less than fifteen years of incessant struggles with the forces of nature. Owing to its fickle

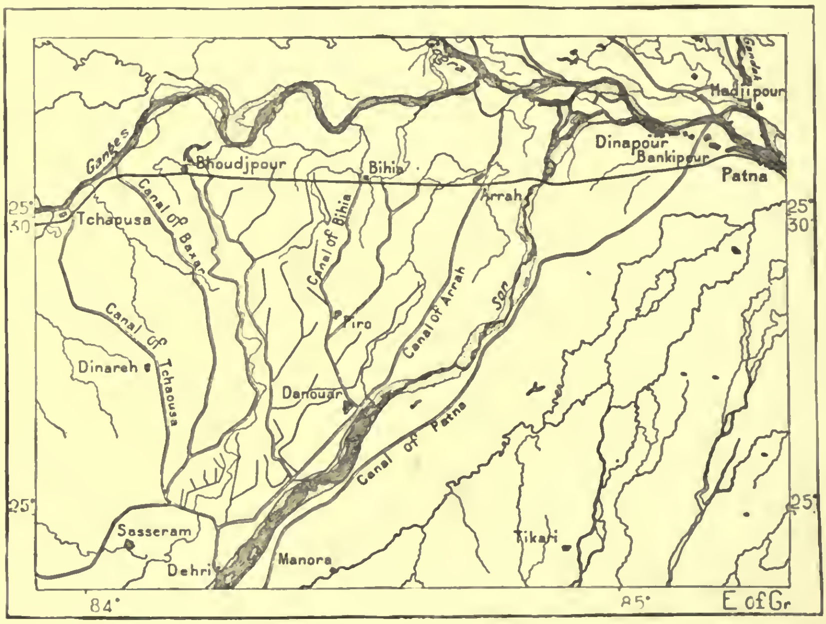
Fig. 82.—Mount Moira.

character the Son is unavailable for navigation; but it floats down vast quantities of bamboo lumber from the plateaux to the plains, and recent works regulating the discharge have also rendered it useful for irrigation purposes. A transverse *anicut* or embankment, 4,000 yards long, retains the stream at its issue from the hills near the village of Dehri, and diverts a considerable portion to two large canals skirting both banks and ramifying far into the plains. The western or largest of these canals receives a mean supply of 4,450 cubic feet per second.

During the last twenty-two centuries great changes seem to have taken place in the hydrography of this region. Megasthenes, envoy from the court of Seleucus Nicator, places the city of Palibothra at the confluence of the Ganges and Erannoboas. But historians are unanimous in identifying Palibothra, the Pataliputra of the Chinese pilgrim H'wen Tsang, with the modern city of Patna, while most archæologists agree with Ravenshaw in recognising in the Erannoboas, "the third river in India for the abundance of its waters," not the Gandak, which discharges over against Patna, but the Hiranyabaha, the "yellow," or "auriferous," a name for which the Son is indebted to its golden sands. But this river no longer reaches the Ganges at Patna. Between the years 1780 and 1835 it seems to have been deflected about 3 miles higher up, and the confluence lies now nearly 10 miles above Patna.

Fig. 83.—Canals of the Son Basin.

Scale 1 : 1,400,000.



30 Miles.

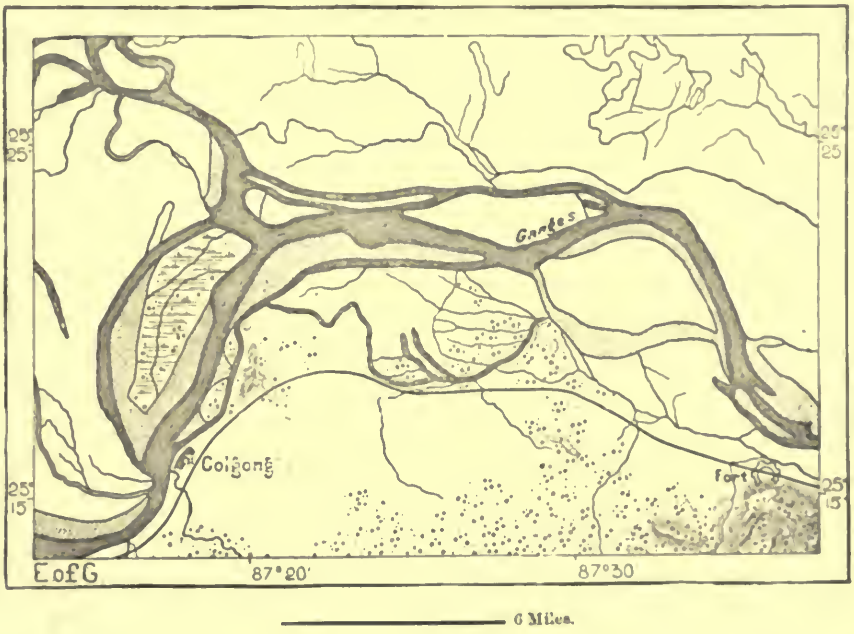
Between these two points old watercourses and uncertain channels, flooded only in the rainy season, still show the traces of these continual shiftings westwards.

Other equally important changes have been accomplished during the historic period in the course of the Ganges itself. All its present windings intersect the older meanderings as laid down on the early charts, from which it appears that the main stream is constantly shifting its bed by eating away, and withdrawing from, both banks alternately. Thus in the middle of the last century the Ganges wound through the plains at a long distance from the Rajmahal Hills, but in 1788 it had not only approached, but had actually cut for itself a new channel through these hills, so that isolated rocks previously on the right now stood near the left bank. Ten years later on all vestige of these reefs had disappeared, while the place where the

main current formerly flowed was occupied by an island 8 miles long and nearly 2 miles broad rising above the highest water level. This displacement of the Ganges and the continual erosions of the Rajmahal Hills explain the decadence of the cities of Pandwah and Gaur, Laknauti or Janatabad, which have been successively abandoned by the main stream. At the beginning of the present century the Ganges came nowhere nearer than 7 or 8 miles to the ruins of Gaur, and the villages that have succeeded this place communicate with the river only through its affluent, the Maha Naddi, or else through a brook navigable in the rainy season. Most of the 20 square miles over which the ruins can be traced are now covered with swamps and jungle. A few walls and portals of mosques are all that now remain of the edifices which have been destroyed by the vegetation, storms, and espe-

Fig. 84.—Windings of the Ganges at Colgong.

Scale 1 : 400,000.



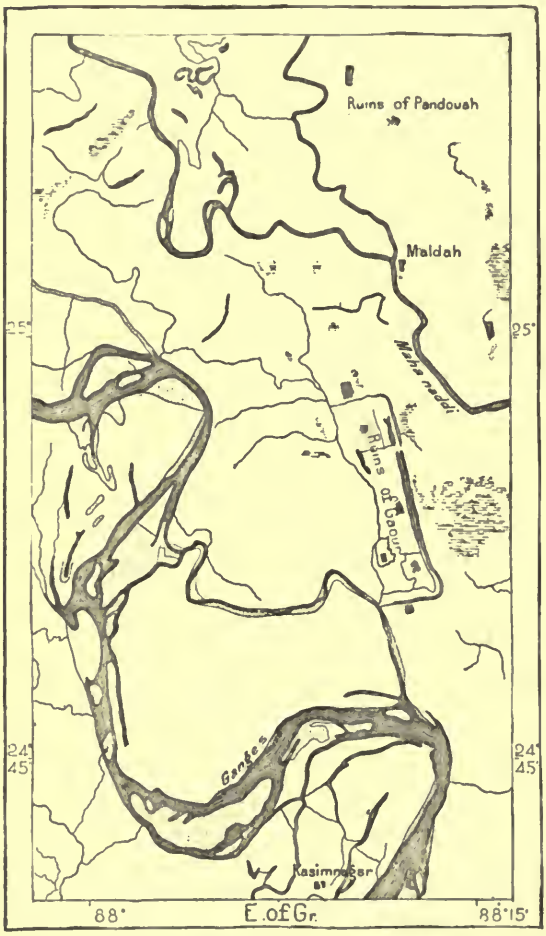
cially the builders of the cities of Maldah and Murshidabad. Analogous changes have been produced throughout the whole alluvial region of the Ganges and its tributaries, whose shiftings have compelled the people constantly to abandon and rebuild their cities.

The Ganges Delta.

Gaur marks the spot where the upper branches of the delta formerly bifurcated. But the delta itself has been bodily displaced gradually towards the south. According as the alluvia encroached seawards, the upper plains became more consolidated, confining the current to a more permanent bed, and preventing it from ramifying to the right and left. At present the head of the delta stands 17 miles south of the ruins of Gaur, and 210 miles from the sea as the bird flies, or

290 miles following the windings of the stream. The whole region comprised within the farthest channels of the Ganges and Brahmaputra exceeds 32,000 square miles altogether. Here the main branch, which takes the name of Padma, or Padda ("Lotus"), winds south-eastwards to its junction with the Jamuna, which is the true Brahmaputra. The secondary branch retains the name of Bhagirati, as the sacred source of the Ganges, and, notwithstanding its reduced size, this is, in fact, still the most venerated stream. Although now closed even to small craft for a great part of the year, there can be no doubt that the main current flowed formerly through this channel. But the rupture of the embankments, formerly confining the Padma to a narrow bed, enabled that branch to overflow eastwards to the Brahmaputra, which was till then distinct from the Ganges. Such is probably the meaning of the legend, which relates how at this point the sacred stream was swallowed up by a demon. Continuing its southerly course through almost perfectly oval meanderings, the Bhagirati, after receiving the Jellinghi and Churni (Mata Bhanga) from the main branch, takes the name of Hugli thence to the sea. Towards the east the whole region stretching to the Brahmaputra is intersected by channels continually shifting their beds and even their names, so that with every fresh inundation the topography and nomenclature of this district become modified. Towards the west traces also remain of old watercourses, and here the Rupnarayan estuary is still regarded by the natives as one of the Gangetic mouths.

Fig. 85.—Ruins of Gaur.
Scale 1 : 500,000.

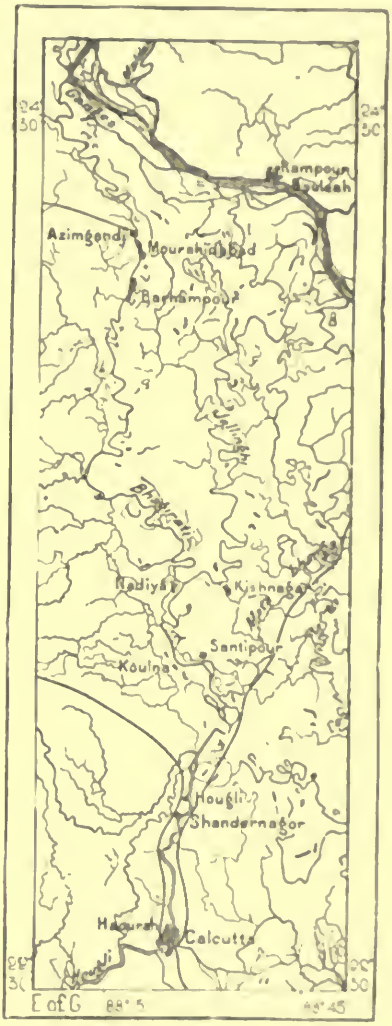


The Hugli itself has undergone remarkable changes since the Europeans first established their factories on its banks. Several towns which formerly enjoyed direct relations with the western seaports are now accessible only to light craft. But while the channels of Satgaon, Chinsurah, Chandernagor, formerly or still belonging to other European powers, became choked with mud through neglect, the English have taken all the greater care to keep open the Hugli at least as far

as Calcutta. No expense has been spared to deepen the channel, strengthen the banks, prevent the shoals from shifting, and by skilfully controlling the tides they have converted one of the most dangerous branches into a comparatively easy waterway. The bore, rising 6 or 7 feet above the ordinary level, and rushing up stream at the rate of 26 feet per second, is still formidable to small craft. But ships drawing up to 25 or 26 feet now easily sail by the Damudah and Rupnarayan estuaries, where so many vessels were formerly swallowed in the quicksands.

Fig. 86.—Course of the Bhagirati, Jellinghi, and Mata Bhanga.

Scale 1 : 1,400,000.



30 Miles.

If, commercially speaking, the Hugli has become the Ganges, if it must even be regarded historically as the continuation of the sacred stream, the true mouth in respect of volume is certainly the Meghna, which also receives the Brahmaputra, and which follows the direction of the Padma from north-west to south-east. Of all the delta channels the Meghna, with its island-studded estuary some 60 miles broad, is best entitled to give its name to the common hydrographic system of the Ganges and Brahmaputra. Through this branch flow the ungovernable waters of the united streams sweeping away old and forming new landmarks along their impetuous course, building up or destroying islands, blocking ancient and piercing fresh channels seawards. The tides also penetrate through the Meghna farthest inland, reaching to Rajmahal and even to the Gogra confluence, and rising at the mouth some 13 or 14 feet. The phenomenon of the bore, formidable enough in the Hugli, is far more tremendous in the Meghna, where it ascends the stream in a liquid mass 20 feet high, with a velocity of 15 miles an hour. The sound of the rushing waters is heard many miles away, and to this cause is probably due the local legend of the "Barisal Gun," whose booming is wafted by the winds to the banks of the Meghna. During the monsoon vessels seldom venture on the waters of the estuary at night.

Through the Meghna large marine animals ascend hundreds of miles from the ocean. But a species of sweet-water dolphin known as the *platanista*, and said to be of marine origin, is found in the Indus as well as in the Ganges and Brahmaputra. How this cetacean, which reaches nearly to Hardwar, has gradually adapted itself

to its present habitat, and how it has crossed the space now separating the Ganges and Indus basins, are questions which some have endeavoured to answer by the hypothesis of an old inlet of the Arabian Sea penetrating north-eastwards to the Himalayas, and gradually transformed to estuaries and fluvial plains. The intervening land between Saharanpur and Ludiana is in any case only 910 feet above sea level, while the streams descending towards this water-parting have often modified their course, flowing now to one, now to another, of the two river basins.* Another remarkable phenomenon of the Gangetic fauna is the isolation of the *bombifrons* crocodile, which is met only in the *duns* above Hardwar, while the gavial frequents the lower reaches of the river.

The mean discharge of the Ganges has certainly diminished since the middle of the present century, mainly owing to the small quantity of water now returned to it by the irrigation canals in the plains. Nevertheless it is still able to send past the Rajmahal Hills over 1,750,000 cubic feet per second during the floods. But it falls to 21,000 in times of long drought, so that the mean is estimated at from 420,000 to 525,000, a quantity representing about half of the annual rainfall in the basin. During the inundations the banks overflow far and wide on the plains. But instead of contending with the forces of nature, the riverain populations have adapted themselves to its laws. Except near the large cities, they have abstained from constructing costly embankments, which require to be constantly strengthened with fresh works, and raised higher and higher according as the bed of the river becomes elevated by alluvial deposits. Being thus unable to shelter themselves behind a barrier of dykes, like the inhabitants of the Hoang-ho, Loire, Po, or Mississippi, they cannot till the land with a view to tardy harvests. Hence two crops are raised, one during the period of low water, the other immediately after the floods have abated, while the soil is still muddy. The great danger of sudden eruptions is thus avoided, while the land is allowed incessantly to renew its fertility. In the absence of natural eminences, artificial terraces have been constructed for the riverain towns and villages above high-water level, which is about 45 feet at Benares, diminishing gradually seawards. The centres of population are thus transformed to temporary islets during the floods. Unfortunately these works are carried on without much method, the excavations made to procure the necessary materials long remain the receptacles of all sorts of noxious refuse, and thus become hotbeds of disease, until they are at last filled by the alluvial deposits.

The Sanderbans.

A very large proportion of these deposits are also precipitated on the low-lying banks, and on the *chars* or *teys* of the Sanderbans. Fresh sandbanks and islands are thus continually formed about the mouths of the delta, requiring the marine charts and the instructions of the pilots to be modified after every survey. Towards the east, about the Meghna estuary, the land is rapidly encroaching on the Gulf of Chittagong, while in the west the delta seems to have undergone no increase in

* Medlicott and Blanford, "Manual of the Geology of India"

recent times. Here the fresh accumulations are often swept away by the cyclones, besides which the middle delta, like the low-lying tracts about the Po, Amazon, and several other large rivers, seems to be included in an area of slow subsidence. Nowhere below the upper alluvial deposits has the least trace been discovered of the marine formations which we should expect to find if the sea had within a recent geological epoch occupied the plains of Lower Bengal. A shaft sunk to a depth of 470 feet at Calcutta brought up nothing but the remains of a land flora, fluvial shells, and fresh-water sedimentary matter. A bed of crystalline gravel was even penetrated, which must have come either from the Rajmahal Hills or from rocky eminences, which erosions have since caused to disappear from the region of the delta. Hence throughout the modern geological epoch the Gangetic delta must have always stood above sea level. The most recent marine formations found towards the north at the foot of the Garro Hills all belong to the tertiary ages.

But although dry land for such a vast period, the soil of Calcutta has never ceased to subside, for the old vegetable deposits penetrate to depths far below th present level of the sea. This phenomenon of subsidence, all the more remarkable that the opposite movement has been observed on the Orissa and Arrakan seaboards on both sides of the Bay of Bengal, is probably continued south of the delta in the direction of the central depression in the bay. This "swatch of no ground," as it is called, lies about 80 miles to the south-east of the mouth of the Hugli, but close to the banks obstructing the entrance of the Matlah and neighbouring estuaries. The waters surrounding it are only from 130 to 250 feet deep, whereas in the interior of the cavity the sounding-line sinks 1,350 and even 1,650 feet without reaching the bottom. According to Fergusson, this crater-like formation must be attributed solely to the rotatory action of the tides and marine currents which meet at the northern extremity of the bay.

The southern region of the delta is a sort of neutral zone between land and water. It is connected with the *terra firma* by its vegetation, with the sea by the liquid masses everywhere penetrating through it, and even completely submerging it during the spring-tides and storms. This tract is known by the name of Sanderban (Sunderband), a term variously explained by etymologists as the "Red Forest" (Sindurban), the "Superb Forest" (Suderban), the "Salters' Land" (Chandabhanda), or else the "Forest of Sundri," that is, the *heritiera littoralis*, the most characteristic tree of these half-submerged lands. From the *hugla* (*typha elephantica*), another plant peculiar to the Sanderban, the river Hugli is also said to take its name. This watery region stretches west and east over 120 miles, and has a total area of 8,000 square miles. The vast labyrinth, intersected by fourteen considerable streams and by hundreds of channels with innumerable ramifications, is accessible only to the boatman gliding in his frail bark of red sundri wood amidst the reeds, or under a canopy of overhanging foliage. Numerous islands under the shelter of sand dunes are covered with dense forests administered by the Government, while others produce nothing but dwarf palms (*phœnix paludosa*) or brushwood, affording a retreat for wild beasts. The ruins

found here and there show that the Sanderbans were inhabited, and even contained some large towns at the time when the Europeans appeared on the scene. The early Portuguese writers unanimously assert that these tracts were thickly peopled in their time. But the limit between the cultivated districts and the uninhabited coast lands seems to have remained unchanged for centuries. During the last hundred years, however, the cultivated area has largely increased, especially in the direction of the Meghna, where the mean elevation of the land is somewhat higher. In 1872 the reclaimed soil had a total extent of 700,000 acres, but being mostly exposed to inundations, extensive embankments have had to be constructed for its protection. The cultivated parts are thus often converted by the high tides into countless islets of polygonal form.

Climate, Traffic, and Geology of the Lower Ganges.

This region of shifting estuaries, where the fresh and salt waters intermingle with their diverse floras and faunas, and which are surrounded by marshy depressions known as *bhils*, *jhils*, or *jhullas*, is the hotbed of the so-called "Bengal" or "jungle fever," one of the most dreaded endemics in India. It attacks people of all races, natives and foreigners indiscriminately, choosing its victims in Calcutta especially amongst the boatmen, sailors, porters, custom-house officers, and others engaged along the river banks, elsewhere amongst the hunters and planters occupied on the low-lying grounds. It is most prevalent in September, when the waters begin to subside, leaving wet slimy surfaces exposed to the sun. Cholera is also endemic in Lower Bengal, from which centre it spread early in the present century over the rest of India and throughout the whole world. It has probably existed from the remotest times along the banks of the Lower Ganges, although regarded as a new disorder at the time of its sudden appearance in Europe. The superabundant moisture of the country and the putrefaction of the decayed substances saturated with water, which is everywhere found at a few inches below the surface, are the causes of this terrible pestilence.

The thousands and even millions of dead bodies formerly thrown up by the Ganges along its banks also contributed to corrupt the atmosphere. But since the introduction of sanitary arrangements under the British administration, this great artery has ceased to be the universal receptacle of its votaries after death. Nevertheless the police regulations are still too often eluded by filial devotion eager to secure for the departed the blessings attending a watery grave in the sacred stream of immortality. For the Hindu, the Ganges, which waters his rice-grounds and brings his crops to maturity, is more than a goddess; she is a divine mother, who consented to descend on earth only to wash and purify the remains of King Bhagirati's ancestors. But her source is still in the heavens, and in her pure stream the immortals still delight to sport. When the waters burst from the firmament, the mighty Siva alone, whose head and shoulders are the rocks of the Himalayas, had strength to bear the weight of the river, "falling from his brow like a pearl necklace whose string is broken."

Along the Ganges banks every spot is sacred, and its very name, reverently uttered hundreds of miles from its course, suffices to wipe out sins committed during one or more previous existences. Devout pilgrims fill their vials with the divine water, which are then placed in two panniers joined together by a bamboo, and decked with peacocks' feathers. Charged with this burden, like the Auvergne water-carriers, they traverse the whole peninsula, retailing the sacred fluid at a high price; and the rich are thus enabled to enjoy the inestimable privilege of

Fig. 87.—Bengal Scenery—View near Calcutta.

purifying themselves with the holy stream without journeying to its banks. At the same time, this pilgrimage to "mother Ganges" is indispensable for the acquisition of perfect sanctity, and its merits are greatly enhanced by performing the *pradakshina*, which consists in travelling for six months up and down the banks between its source and its mouth. Along this route the specially sacred spots are naturally indicated by the confluences, isolated bluffs, sudden windings, wild gorges, and the like. At such places the ablutions have their full cleansing

efficacy; and here, consequently, the pilgrim tarries, the trader establishes himself, and towns spring up under the shadow of the temple. In no other land has religion had such a large share in the foundation of cities.

Next to the Yangtze-kiang, the Ganges is, of all rivers, undoubtedly the most important economically. The land, tilled by the hundred million inhabitants of its basin, is extremely fertile, yielding in abundance every variety of produce; their cities are wealthy and industrious; light craft are crowded in thousands about the riverain ports. Till within recent times, this waterway, with the channels of its delta, was the only commercial highway in Bengal; and although now deprived by the railways of much of its traffic, the Ganges still remains one of the most frequented in the whole world. Calcutta alone receives from the inland ports over £16,000,000 worth of merchandise yearly. At certain points several hundred loaded barges pass the ghats in a single day, and the annual movement in the ports of the delta must be estimated by millions of tons. The Ganges cannot, of course, compare with the Thames, the Hudson, or Mississippi for steam navigation, but nowhere else, except on the Chinese rivers, are smaller craft more numerous.

West of the Lower Ganges the most important stream is the Damudah, which, owing to its frequent inundations, is much dreaded by the riverain populations, but which is all the more venerated by the wild tribes of the surrounding hills. During the floods of 1757 the Damudah opened for itself a new channel southwards directly to the Ganges estuary, and the old bed connecting it with the Hugli has been completely abandoned since 1762. In the region of the Upper Damudah and its affluents are found the only hilly tracts in Bengal proper; and these hills, while continuing the Vindhya system under diverse names, differ from it in their geological formation. The sandstones forming the eastern escarpments of the Bhagelkhand plateaux are replaced by metamorphic and carboniferous rocks. A few isolated groups alone still attest the former eastern extension of the Vindhyas. Above the great bend of the Ganges the Rajmahal Hills consist of basalt traps, much more recent than the lavas of the Dekkan; and about 20 miles south-east of Colgong are seen some small trachyte and porphyry cones, which were probably the nucleus of the old plutonic ranges.

Inhabitants of the Ganges Basin.

Although approaching close to the most densely peopled regions of India, the hills lying west of the Bardwan and Patna railway are amongst the least known in the peninsula. Here towns and villages occur at rare intervals, while certain districts have been rendered almost uninhabitable by the tiger, elephant, and other wild beasts. Nevertheless, the populations of these rugged tracts contribute their share towards the increase of wealth in Bengal. They prepare the cashoo of commerce from the sap of the *catechu acacia*, gather white vegetable wax, and collect from the branches of certain trees the gum-lac secreted by the insect called *coccus lacca*.

The great bulk of the multitudes dwelling on the Gangetic plains, whetner of

Aryan, Dravidian, Kolarian, or Indo-Chinese origin, may be classed amongst the more or less civilised members of the human family. But within the basin itself there still exist a number of tribes and castes, some subdued, others relatively independent, which have preserved their racial characteristics without accepting even the outward forms of Hindu or Mohammedan culture. Amongst these communities some may be regarded as barbarous or savage. Driven from the plain by the Aryan and other invaders, they have taken refuge either in the marshy forests, skirting the foot of the Himalayas, or in the hilly districts along the lower course of the Ganges. Others again, like the European gipsies, have escaped destruction by adopting a nomad life, without any fixed abodes, and moving about incessantly from place to place. The Nats, Kanjars, Badyas, Bazigars, as these Gangetic gipsies are variously called, form temporary villages of wooden huts, covered with foliage or matting, and graze their flocks by the wayside. They themselves live on offal, carrion, and other refuse, when their thousand occupations, such as fortune-telling, exhibiting bears or monkeys, horse-dealing, minstrelsy, fail to yield them better sustenance. Like their European kindred, they secure immunity from persecution by always keeping prudently aloof from political or religious strife. The local rajas have no more faithful subjects than these erratic tribes, whose religion is always that of the majority, or, rather, whose only faith consists in promoting the common welfare.

In Audh, and farther east along the Nepal frontier, the Bhars and Tharus, who claim Rajput descent, live in scattered groups, cut off by their marshy territory from all communication with the peoples of the plains. But others, who were unable to escape from the conquerors, have been reduced to a state of serfdom, or else made outcasts. Thus the Kori and Chamars, tanners and weavers in the towns, have remained little better than slaves in the rural districts, where they continue to till the land for their Rajput or Brahman masters, now legally free. Any appeal to the courts could avail them little. Despised as they are, they could not escape from the hovels they share with the swine, and would everywhere be repelled as unclean beasts. A somewhat higher position is held in Audh by the Pasi, who are said to be descended from the old masters of the land, and who have become half Hinduised. They supply most of the rural police in Audh, where about one million of the whole population is still classed among the aborigines.

This element is much more numerous in the Bengal provinces, where they are estimated at 3,000,000, exclusively of the low castes representing the old races, which have become variously mingled with the Hindu intruders. Several tribes have succeeded in preserving a nominal independence in the hilly districts south of the Son and Ganges. Thus the Malers, or Pahariahs—that is, "hillmen"—who number about 400,000 in the upland Rajmahal valleys, still enjoyed a certain autonomy down to the middle of the present century. Since then, the English, after several useless military expeditions, have induced the chiefs to become state pensioners, and their territories are now carefully circumscribed. All have discontinued their raids on the surrounding districts, and now appear on the plains only as peaceful traders. Nor can the Pahariahs be regarded in any sense as savages. Their cabins

are neatly constructed of bamboo canes, and fitted up with carved furniture, while the approaches are tastefully laid out. Their fields and gardens are well tilled, and usually yield enough to supply a small export trade. As dealers they are scrupulously honest, one of their national proverbs being, "Rather die than lie." Like most of the Assam and Indo-Chinese tribes, they set apart a common dwelling in every village for the young unmarried men. Before the houses and near the sacred trees are planted tall bamboos, to scare the evil spirits, who take advantage of the absence of the sun to steal the great god of the universe by night. Most anthropologists affiliate the Pahariahs to the Dravidians of Southern India, to whom they have, at all events, been assimilated in speech. The statement that they are rapidly diminishing in number seems to have no solid foundation, and is due probably to the errors of the census returns, caused by the change of names common amongst these clans.

The Santals and other Aborigines.

The Santals, or Sontals, who number perhaps 2,000,000, are concentrated chiefly in the valleys and first eminences rising from the plains towards the Pahariah Hills. Hence the term Daman-i-koh, or "Skirt of the Mountains," applied to the part of their territory near the Rajmahal uplands. Although agriculturists, the Santals still retain some of their old nomad habits, settling on one spot until the land becomes impoverished, and then removing to fresh clearances in the jungle. But in several districts, and especially in the Daman-i-koh, where they had increased from 3,000 in 1790 to over 200,000 in 1840, most of the land has already been reclaimed, so that they have here become sedentary in spite of themselves. No people in India have had to suffer more from heavy land-taxes, fiscal regulations, and especially the usury of money-lenders. Driven to desperation by these exactions, and failing to obtain redress from the British tribunals, they resolved to quit their homes in a body, and seek for justice from the viceroy himself in Calcutta. The eastern Santals, who had suffered most from imposts and usurers, set out on June 30, 1855, men, women, and children, with a vanguard of 30,000 armed men, preceded by heralds and drummers. They had advanced some distance into the plains, wasting the plantations and firing the houses of the money-lenders, when they came into collision with the British troops. A massacre rather than a battle was the result, and when the country was occupied all the male adults of several villages were found to have perished. After the catastrophe the authorities set about examining their grievances and affording them some redress. The lands were restored to those who cultivated them, certain usurious agreements were cancelled, and slavery, hitherto tolerated by the tribunals, was solemnly abolished, although afterwards too often revived under another form. The railway, penetrating into the Santal territory, attracted "navvies" in tens of thousands, the tea-growers of Assam required labourers for their plantations, fair promises were held out to them even by the large landholders of Mauritius and Réunion. But everywhere the result was nearly always the same—real slavery under the disguise of contract labour. Ever fond of change, the Santals

emigrate freely. Thousands seek employment for a season, or even for years, on the plains; others allow themselves to be carried beyond the seas. But few ever find their way back to their native land.

The national type is amongst the most remarkable in India. While lacking the delicate traits of the Bengali, the Santals have more energy and more of the beauty inspired by frankness and courage. The features are generally broad, with prominent cheek-bones, rather thick lips, flat forehead and round head. Their

Fig. 88.—Rajmahal Hills—Pahariah and Santal Territories.

Scale 1 : 450,000.

12 Miles.

appearance betrays altogether great bodily vigour and robust health. Quick, animated, always cheerful and good-natured, they have unfortunately learnt to distrust strangers, and the arrival of a Hindu in their country alarms them "more than the presence of a tiger or leopard." Nevertheless the traveller is always sure of a friendly welcome, and will find before every house a seat of honour, the "stranger's bench," where wayfarers, whatever be their race, colour, or religion, are invited to share the family board. Having no artisans of their own race, they have been obliged to invite from other parts smiths, weavers, and other craftsmen,

who are always treated as equals and allowed to intermarry with them. These Hindu strangers thus gradually become completely naturalised.

Of the twelve Santal tribes seven have preserved themselves almost pure, without any caste prejudices. But many communities near the plains have already become half assimilated to the Bengali, losing their national dignity as freemen, and sinking to the position of half-bred low castes despised by those of pure blood. The Santal speech is a member of the Kolarian group, in which it is distinguished above all others for its highly developed agglutinating forms. It seems to have borrowed many roots from the Sanskrit, to which it has in return given several expressions, and apparently even some of its peculiar sounds. But there is no native literature, nor even an alphabet. A few religious tracts and translations of the Bible prepared by the missionaries are the only literary treasures of the natives, who in the schools learn the language of their hated Bengali oppressors.

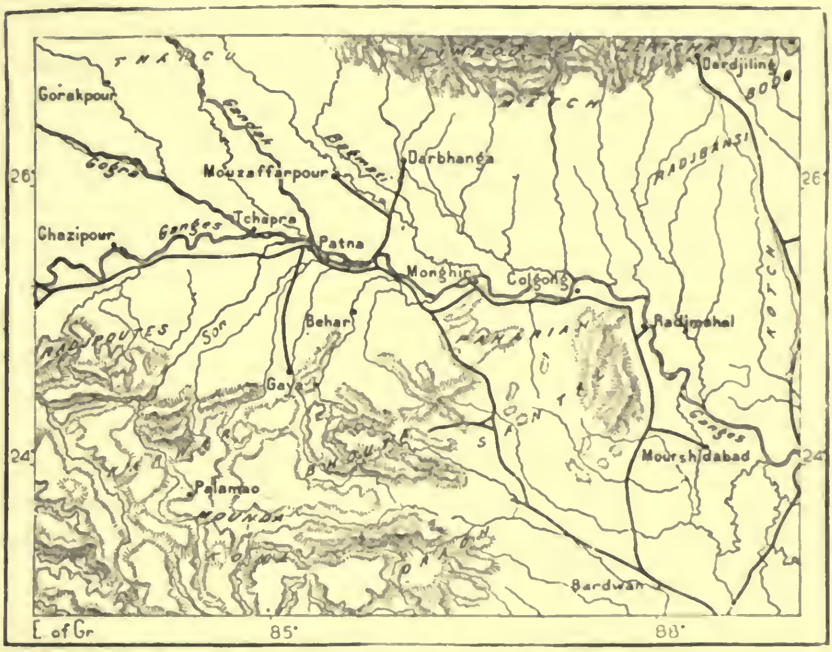
Amongst the Santals the family circle is placed on a solid foundation. Marriages are not arranged beforehand by the parents, as amongst the Hindus. The young men choose for themselves, but always in a different clan from their own, and the father intervenes only in a formal way, to arrange for the reception of the new bride in the tribe. Although not forbidden, polygamy is rarely practised, and never except when the first wife proves barren. Divorce is also rare, and the respect shown to woman is revealed especially in their courteous and decorous demeanour. They are fond of decking themselves with flowers, feathers, false hair, and other finery; and they delight in covering their wives and daughters with metal ornaments, iron when poor, copper or even silver when they can afford it. The houses, which usually stand apart, are painted in alternate red, black, and white lines, and are always neat and tidy. Each has its own special cult, which is performed in common under the direction of the head of the family. On his death-bed the father reveals to his eldest son the name of his god and the words with which he is to be addressed, and at his decease he himself is enrolled amongst the deities, with all his ancestors. After burning the body, the eldest son or nearest akin takes three fragments of the skull and casts them into the sacred river Damudah, in order that they may be borne to the ancestral home beyond the grave. When a Santal falls a prey to a wild beast the nearest relative, abstaining from all food and sleep, follows the animal until he has recovered some remains of the victim, to be sent after him on the same waters.

The patriotic sentiment is as highly developed as the family life. Special ceremonies celebrate the young man's introduction into the clan, and the elders expound to him his duties towards the community. Crime and breach of honour involve expulsion from the clan; that is, civil death. In ordinary cases the right of citizenship may be recovered; but when the charge is serious, for the delinquent nothing is left except to take his bow and arrows and escape to the jungle, whence he never returns. Suspension of rights and banishment are the only coercive measures in the Santal tribe, and the British authorities are quite aware that their system could have no result except to disturb the notion of right and wrong, and diminish the influence of the "fathers" and other representatives chosen by the

Santals themselves. Protestant and Catholic missionaries have been more successful amongst them than elsewhere in India, although the bulk of the nation still remains loyal to the ancient cult. Several times during the year the villagers gather beneath the shade of a sal (*shorea robusta*), pre-eminently the national tree, and dance in a circle, singing hymns in honour of their forefathers, who are supposed to look on from the branches above. To them also sacrifices are offered of goats, fowls, or even red fruits and flowers, whose colour may produce the illusion of blood. The same offerings are brought to the sun, and to the "Great Mountain," a divinity often confounded with Siva, god of the snowy peaks, and this rite would seem to point at a former residence of the tribe in some upland Himalayan valley.

Fig. 89.—Aboriginal Population of Bengal.

Scale 1 : 6,000,000.



120 Miles.

The elephant is also worshipped as a protector of the clans, and the young mother delights to lay her babe at his feet and ask a blessing on its head. Amongst the Kols and Khonds the elephant takes the title of "grandmother."

The Oraons, or Dhangars—that is, "Highlanders"—another native tribe of the Chota Nagpore districts, are, like the Pahariahs, of Dravidian stock and speech, and claim to have come with them from Western India. They call themselves Khuruk, and large numbers of this tribe seek employment either on the public works in Bengal, or else as coolies in distant colonies. The Oraons, who number about 600,000 altogether, divided into several clans, each with its distinctive token or symbolic animal, call themselves the "tribe of labour," and are fond of giving proof of skill and strength in the tasks imposed on them. They are a simple,

light-hearted people, easily amused and given to much dancing and merry-making. The type is somewhat repulsive, very dark, with projecting lower jaw, thick lips, low narrow forehead, long and slightly crisp hair, often smeared with cow-dung. Nevertheless they greatly delight in finery of all sorts, and tattoo various parts of the body. The dwellings are mostly mud huts, with the dum-kharia set apart in every village for gymnastic exercises. Like the Santals, they worship the sun, spirits, and their ancestors, to whom they sacrifice small animals; like them, also, they are exogamous, choose their own wives, and allow the women a considerable share of influence. When two girls become sisters they exchange necklaces in presence of witnesses, and to the end of their days call each other "my flower" or "my smile."

On the plateaux west of the Gangetic delta are some other tribes, such as the Munda, akin to the Kols of Orissa, and the Karwar, akin to the Santals, who roam over the forests south of the Son, living partly on wild fruits and roots, which they share with the monkeys. But most of the aborigines have become largely assimilated to the Hindus, from whom they differ little, except in the inferior position held by them in the caste system. The Chandals, the most despised of Hindu castes, and numbering about 1,500,000, are evidently descended from these ancient occupiers of the land collectively known to the Aryan invaders as Dasyas. The Rajbansi or Pali, who speak a Bengali dialect, the Malda, the Kotch and other peasant castes even more numerous in the Brahmaputra than in the Ganges basin, are also aborigines probably of Burmese stock. Other representatives of the old populations are the Bhuyas, tillers of the soil; the Bagdi, fishers; the Bari, palanquin bearers; the Muchi, tanners. To these have been referred many religious practices of pre-Aryan origin, notably those human sacrifices which the British authorities have had such trouble in suppressing. The sanguinary cult of Siva and of Kali continued to cost the lives of many young persons down to the year 1866 in Jessore, Dakka, and the Chota Nagpore forests. Along the river banks tradition still shows the spots where the victims were immolated by the priests.

The Hindus and Mohammedans.

The purely Aryan Hindu element seems to be most numerously represented in the province of Audh. Here the priests, professional classes, artisans and peasants of the Brahman caste constitute at least one-eighth of the whole population, while most of the landed estates are held by the Rajputs and others claiming to belong to the warlike Kshatrya class. The Kayasths, "shrewd, subtle, and false as the Byzantines of the Lower Empire," have become mainly scribes and notaries, and in combination with the Vaisyas have monopolised the whole trade of the country. The Ahir or Gopa peasants, descendants of shepherds, boast of their kinship with the divine race of Krishna himself. The Kurmi, who were amongst the earliest settlers, and the Muraos, who with the Ahirs constitute the bulk of the people, all claim unmixed Hindu origin, as do also the Aryans, who descended to the lower plains of the Ganges at the time of the primitive migrations. Like the

colonists of most races, they call themselves "twice-born," pretending to a higher rank of nobility than they are really entitled to. The Brahmans of Audh, and especially those of Kanoj, the ancient Hindu capital, even consider themselves superior to those of Bengal, both socially and religiously. They refuse to eat at the same table with them, and an Allahabad or Benares criminal will stoically submit to the lash in his prison cell rather than swallow a single grain of rice prepared by a Calcutta Brahman. Till recently a pure Aryan of Audh, although a mere peasant, could not contract lawful marriage with a Brahman woman of Bengal, however wealthy her father might be. To the provinces on the upper plains of the Ganges and Jamna, where the pure Hindu Brahmans predominate, the Moslem founders of the Moghul Empire have in a special manner given the term "Hindustan," a term afterwards applied generally to all countries where the Hindu languages and religions prevail—that is, to the whole of Cisgangetic India.

The Mohammedans, so numerous in the North-West Provinces, are in a minority in the Ganges basin. Yet they were long the political masters of this region, where they often adopted violent measures to compel the people to accept Islam. In the Upper Gangetic plains they comprise a seventh only, and in Audh not more than a tenth of the population. Somewhat more numerous in Behar, they are scarcely found at all in Chota Nagpore, where pre-Aryan religions still prevail. But the census of 1872 made the unexpected revelation that in the single province of Lower Bengal they were more numerous than in the whole of the Turkish Empire. Here the Mohammedans form one-third of the population, but they are of a very different type from their Arab co-religionists. In many districts they are ignorant of the simplest precepts of the Koran, and being divided into castes, practise the same rites as the Hindus, from whom they differ chiefly by the observance of circumcision. Recently, however, a religious revival has taken place, zealous itinerant preachers have proclaimed the fundamental doctrines of Islam, inducing many to withdraw from the Hindu temples and discontinue their superstitious practices. Their spirit of solidarity with the Mussulmans of the rest of the world has thus been increased, and they are now more alive than formerly to the importance of their religious and political rôle in Asia. Although still divided into castes, they present a relatively compact body, compared with the thousand irreconcilable elements of Hindu society. In Behar and Audh, the Mohammedans belong mostly to the upper classes, while in Bengal they form chiefly peasant communities. In several districts there are even racial as well as religious distinctions. Thus the Rohillas of Rohilkhand south of Kumaon and Nepal, formerly masters of this region, are of pure Afghan stock, and most of the other Mohammedans, whether Sayids, Sheikhs, "Mongols," or Pathans, are also of foreign origin, being descended at least in the male line from the conquering hosts of Mahmud, Baber, and Akbar.

To this Mohammedan element is due the birth of the language now current amongst the majority of the people in the Ganges basin. This Hindustani speech had its origin in the Urdu, or "Camp" of the Great Moghul at Delhi, whence its name of Urdu, or language of the "Horde," by which it is still commonly

designated.* But at first a mere camp jargon, or *lingua franca*, like the "Sabir" of the Franco-Arabs, it soon became a true language, which, thanks to its inexhaustible Arabo-Persian and Hindi vocabulary, to its facility of adopting foreign elements, its harmony, pliancy, and simple structure, has gradually displaced most of the older Hindi dialects. It is now the most common medium of intercourse throughout the peninsula, spoken habitually by probably over one hundred millions of people, and as a cultured idiom far more influential than its Panjabi, Sindhi, Gujerati, Marathi, or Nepali sisters. Hindustani has thus inherited the position formerly held by Pali in the civilisation of the East, and although it has freely adopted vast numbers of Arabic and Persian words, it has none the less remained a pure Sanskritic tongue in its grammatical structure, relational forms, and phraseology. But notwithstanding its Hindi origin, it is commonly written in the Arabo-Persian characters, although as capable of being transliterated in Devanagari as is any other neo-Sanskritic language.

LAND TENURE.

For more than a century the lower Gangetic regions have been directly administered by the English. Since 1769 special agents have been appointed to each province to control the taxation and regulate the assessments. But since that time great changes have been introduced into the local administration. The old communal institutions, differing little from the Great Russian Mir, have almost entirely ceased to exist, at least in Bengal, under the new system of land tenure introduced by the English. Formerly every village was a "brotherhood," holding the forests and pastures in common, and distributing to each member the yearly allotment on which to raise his crops of rice and other cereals, of indigo, fruits, and vegetables. In spite of political changes and religious conversions, enforced or voluntary, the little village republic preserved the common possession of the soil, with the attendant moral responsibility towards the state. It raised the taxes for which it was collectively answerable; it organised the local police, administered justice, modified its internal organisation at its own pleasure. Even when the village was destroyed it continued virtually to exist. The members of the brotherhood, escaping to the woods, still maintained the union, and often after twenty or thirty years of exile they have availed themselves of some fresh political revolution to rebuild their village on the same spot, and resume the unchallenged occupation of the lands assigned to them by tradition.

But the British heirs to the old rulers of the land have almost everywhere changed its tenure in favour of the farmers-general. Even in 1798 they completely renounced the possession of the soil to the benefit of contractors responsible for the taxes. Some estates were sold or ceded absolutely; but most of them were transferred to *zamindars* (*talukdars*) or revenue farmers for a yearly rent. In the old kingdom of Audh the whole land was thus distributed amongst 256 holders.

* From the Mongolo-Tatar *yurt*, *urt*, *urdu*, that is, *tent*, *camp*, *encampment*, comes the English word *Horde*, a warlike nomad tribe dwelling in tents.—EDITOR.

The zamindars in their turn sublet or make over the soil to agents, who do not themselves cultivate it, but employ rayats (ryots) for the purpose. The net produce is in this way manipulated by a whole series of middlemen, and even when the future labour of the peasant is not forestalled or his stock of rice supplied by usurers at the normal charge of 50 per cent. per annum, he is still required to pay the impost three or four times over to the zamindar's sub-agents. In most districts the rayats are not even guaranteed the right of residence on the land they cultivate, although a residence of 12, 20, or 30 years, according to the provinces, gives them a prescriptive protection against summary ejectment.

In the Upper Gangetic provinces a large number of the old agricultural bhayachara, or "brotherhoods," still survive, but even here the Jaina and Banyan traders and money-lenders have got possession of whole villages, which they administer for their own profit. In Behar especially the condition of the peasantry is most deplorable, the accumulated burden of their debts having here made them the serfs of the usurers. In the eastern and northern districts of Bengal things are somewhat better, some especially of the Mohammedan rayats enjoying a really comfortable position. But even here the old communal organisation is recalled only by a few idle ceremonies. The *Panchayat*, or "Council of Five," still meets here and there, but its decisions are ignored by the tribunals and landholders alike. Still most of the villages continue to appoint their official councillor, who is usually chosen as umpire in disputed matters. Such, in spite of repeated revolutions, is the persistence of usages based on the sentiment of right, that the members of the commune generally recognise as *mundul*, or hereditary village chief, a man of low caste representing the old pre-Aryan owners of the land. In the Calcutta district 15 only of the 6,000 heads of villages belong to high, and 1,300 to intermediate castes, while 3,600 are low-caste men. Two thousand years of possession have not yet conferred on the Aryan intruder complete rights of citizenship.

TOPOGRAPHY.

The two divisions of the Gangetic plain, whose respective capitals are Delhi and Calcutta, present great contrasts in the distribution of their inhabitants. In one large urban communities are numerous, while in the other the population, apart from the chief town, is almost exclusively rural. The Doab provinces, where trade and industry have been attracted by a succession of imperial capitals, have become thickly studded with cities in which industrious immigrants from Persia, Afghanistan, and Bokhara have settled in large numbers. Bengal, on the contrary, has remained an essentially agricultural region, although its capital has become the administrative centre of the Anglo-Indian empire. It is the only large city in the province, where most of the native Bengali live in small villages surrounded by clumps of trees. Although one of the most densely-peopled regions on the globe, the passing traveller might almost fancy it uninhabited, so completely are the hamlets embowered in their tropical foliage.

Near the right bank of the Jamna, here forming the official limit of Panjab

and the North-West Provinces, stands the ancient city of *Karna.*, which dates from the mythical times of the Mahabharata, and which figures largely in all the Mohammedan and subsequent invasions. *Panipat*, which lies farther south, is famous in the history of Indian warfare as the scene of the five decisive victories gained by Timur, Baber, and Akbar in 1398, 1526, and 1556, by the Persians, led by Nadir Shah in 1739, and the Afghan Ahmed Shah in 1761. Here was usually decided the fate at once of Delhi and Northern India. The great trunk road traverses both of these places, but the railway passes farther east through the heart of the Doab, and the strategic points have consequently become displaced. Along this line follow in succession from north to south the towns of *Saharanpur*, *Deoband*, the "Holy," *Muzaffarnagar*, and *Mirath* (Merut), the last named being one of the chief British cantonments in the Doab. Here began the terrible Sepoy mutiny in 1857, although the English troops were able to hold the place during the war. On a bluff commanding an old bed of the Ganges, 33 miles north-east of Mirath, are some heaps of rubbish marking the site of *Hastinapura*, the "Elephant City," famous in Hindu legendary history.

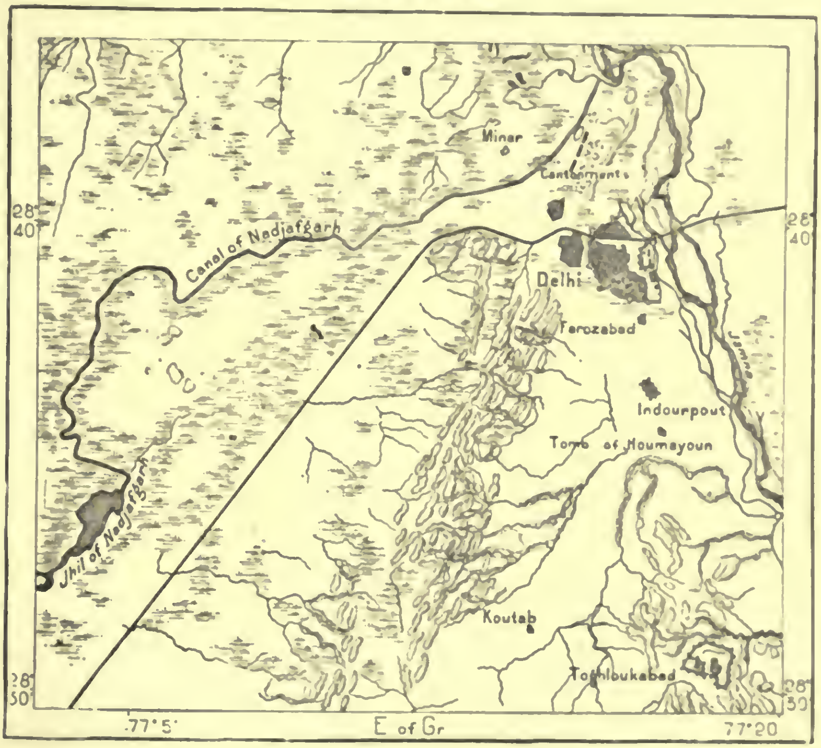
Delhi (*Dehli*, *Dihli*, *Dili*), also one of the old Indian capitals and recently chosen by the British Government as the most appropriate spot to raise the throne of the Kaisar-i-Hind, has been more than once destroyed, not like Hastinapura, by fluvial inundations, but by the hand of man and time. The present city, officially named *Shahjahanabad*, from its Moghul founder, dates only from the first half of the seventeenth century, but the ruins of its numerous precursors are strewn over a distance of 12 miles from its ramparts, and cover a total area of about 46 square miles. Of all these cities, the oldest is *Indraspatha*, the site of which is still marked by the walls of *Indurput*, 2½ miles south of the present enclosure. Its foundations are attributed to the legendary Yudishtira, and thirty-four centuries are supposed to have elapsed since the sons of Pandu wrested this region from its primeval Naga snake-worshippers. But the successive cities have borne the name of Delhi for nineteen centuries only.

The modern city, forming a crescent along the west bank of the Jamna, covers a space of about 3 square miles, at the very apex of the triangular plateau, limited on the one hand by the Gangetic plains, on the other by the Thar desert and Indus basin. The tablelands of the Vindhyan system, although broken on the south by numerous valleys, are not completely terminated till we reach the ridge of Delhi. Here at last disappear all the obstacles offered by the roughness of the surface to the progress of caravans and armies. Delhi thus occupies the exact spot where all the great historical routes of the peninsula converge from the Lower Ganges basin, from the Hindu-Kush passes, the Indus delta and the Gulf of Cambay. Before the construction of these highways it was pre-eminently the strategic centre of the whole of Northern India; hence it naturally rose rapidly from its ruins after every fresh disaster. At present it has become the chief centre of trade and of the railway systems between the three extreme points, Calcutta, Peshawar, and Bombay Even the local hydrography attests the great part played by Delhi as the connecting link between the east and the west. Above its walls the Jamna ramifies into two

branches, one of which flows south-west as if to join the Indus. But after filling the marshy depression or *Jhil* of Najafgarh, the stream sets during the floods back to the Jamna.

Within its present enclosure Delhi forms two distinct cities. The northern quarter, where the railway penetrates from a fine viaduct over the sands, islets, and narrow channel of the Jamna, forms the English city, which is separated from that of the natives by extensive grounds and broad avenues. The old palace of the Moghul emperor Shah Jahan, commonly known as the "fort," is also isolated from the rest of the city by squares planted with trees. Now transformed to a barracks,

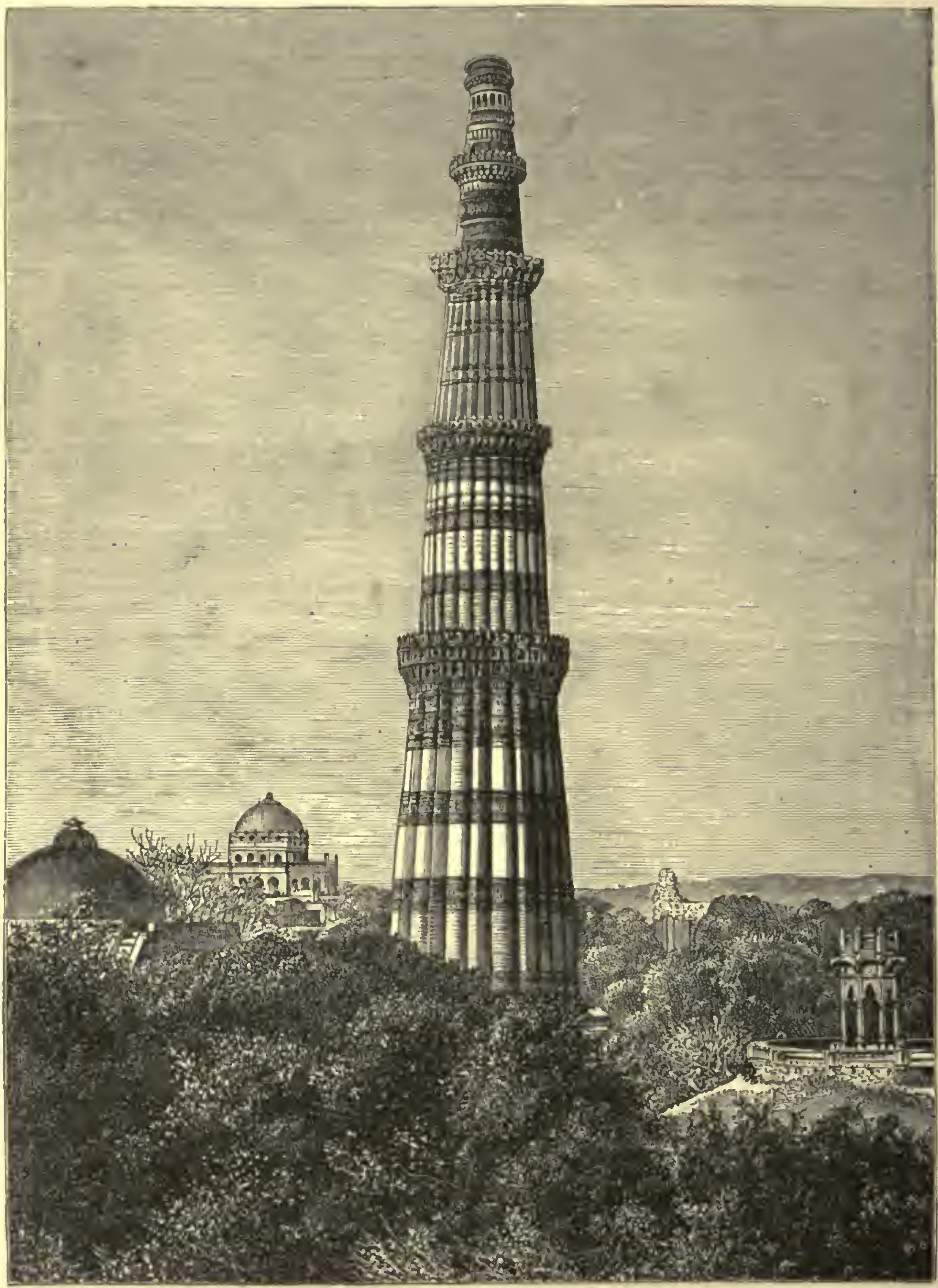
Fig. 90.—Delhi.
Scale 1 : 300,000



it has lost much of its beauty, although the vast parallelogram, covering no less than 120 acres along the banks of the Jamna, still encloses some of the most remarkable buildings in India. The entrance-hall, 380 feet long, forms one of the grandest apartments in the world, and the audience chamber, whose pavilions are seen from the river, is a marvel of grace and elegance, justifying by its arabesques and mouldings the inscription running round the ceiling: "If there be a heaven on earth, it is this, it is this!" The Grand Mosque, standing on a rocky eminence in the native town, is also one of the architectural glories of India. By the side of this magnificent structure, with its noble proportions, carved porticoes, minarets,

and three white marble domes, the English buildings—college, museum, hospital, barracks, and churches—seem like the work of barbarians.

Fig. 91.—Environs of Delhi.—Tower of Kutab.



But outside the enclosures, amongst the débris of the older Delhis, are still to be found the most interesting monuments, temples, tombs, mosques, columns, dating

from every epoch of Hindu art for the last 2,000 years. The palace of Ferozabad, containing the pillar of King Asoka, the tomb of Humayun, son of Baber, the observatory raised by the raja of Jeipur in 1728, are scattered over the plain to the south of the city, and the long line of edifices terminates 9 miles from the walls of Delhi with Kutab's group of mosques and colonnades. All are overtopped by the "Tower of Victory," dating from the thirteenth century, and consisting of a group of columns divided into five storeys by circular galleries, sculptures and inscriptions in relief. The tower diminishes in diameter upwards, so that its absolute height of 230 feet is apparently increased by the laws of perspective.

It is easy to understand the pride felt by Indian patriots at the sight of all these eloquent witnesses of their past glories. After recovering the city in 1857, the English obliged all the natives, Hindus and Mohammedans alike, to retire beyond its walls while martial law lasted. Now they are more numerous than before the war, and to them chiefly belong the elegant magazines of jewellery, cloth of gold, carved cabinet-work, which are the special industries of Delhi, but which have unfortunately been debased by the imitation of European models. Towards the south-west the large town of *Rewara* forms the advanced depôt of Delhi for supplying the industrial wants of all the petty states on the plateau.

In the south-east the doab, here intersected by the great historic route, the trunk line of railway and the Ganges Canal, is thickly studded with large towns, such as *Bulandshahr* (*Baran*), *Sikandarabad*, *Khurja*, with its magnificent Jaina temple, *Koil*, *Aligarh*, a former bulwark of the Mahratta power, and *Hathras*, the chief centre of trade between Delhi and Cawnpore. It is connected by rail with *Muttra* (*Mattra*), on the west bank of the Jamna, one of the holy cities of India, whose inhabitants are chiefly engaged in quarrying and dressing the stones used in the erection of their innumerable shrines and other religious buildings. Muttra, the ancient *Mathura*, capital of one of the "Lunar" dynasties, was one of the great centres of Buddhism, and is mentioned by Ptolemy under the name of *Modura*, as a "city of the gods." Amongst the heaps of débris dotted over the district, many sculptures of the Buddhist period have been found, attesting Græco-Baktrian influences in the disposition of the groups and flow of the draperies. After the expulsion of the Buddhists the names of the temples were changed, the style of architecture modified, the legends transferred to other mythical beings, but the city remained none the less one of the sacred places of India. In the neighbourhood was born Krishna, patron of shepherds, and since worshipped as the Christ of the Hindus. Every spot in the district has its legend associated with some episode of his life, and most of the monuments round about have been erected in his honour. *Brindaban*, the ancient *Vrindavana*, marks the spot, 4 miles farther north, where Krishna seized the snake king coiled round a tree, and hurled him into the Jamna. A temple has recently been built here by some Jaina bankers, at a cost of over £240,000. The whole country round about Muttra and Brindaban has been left by the piety of the faithful in the possession of the monkeys, squirrels, peacocks, parrots, and other animals, from whom the inhabitants have respectfully to preserve their provisions.

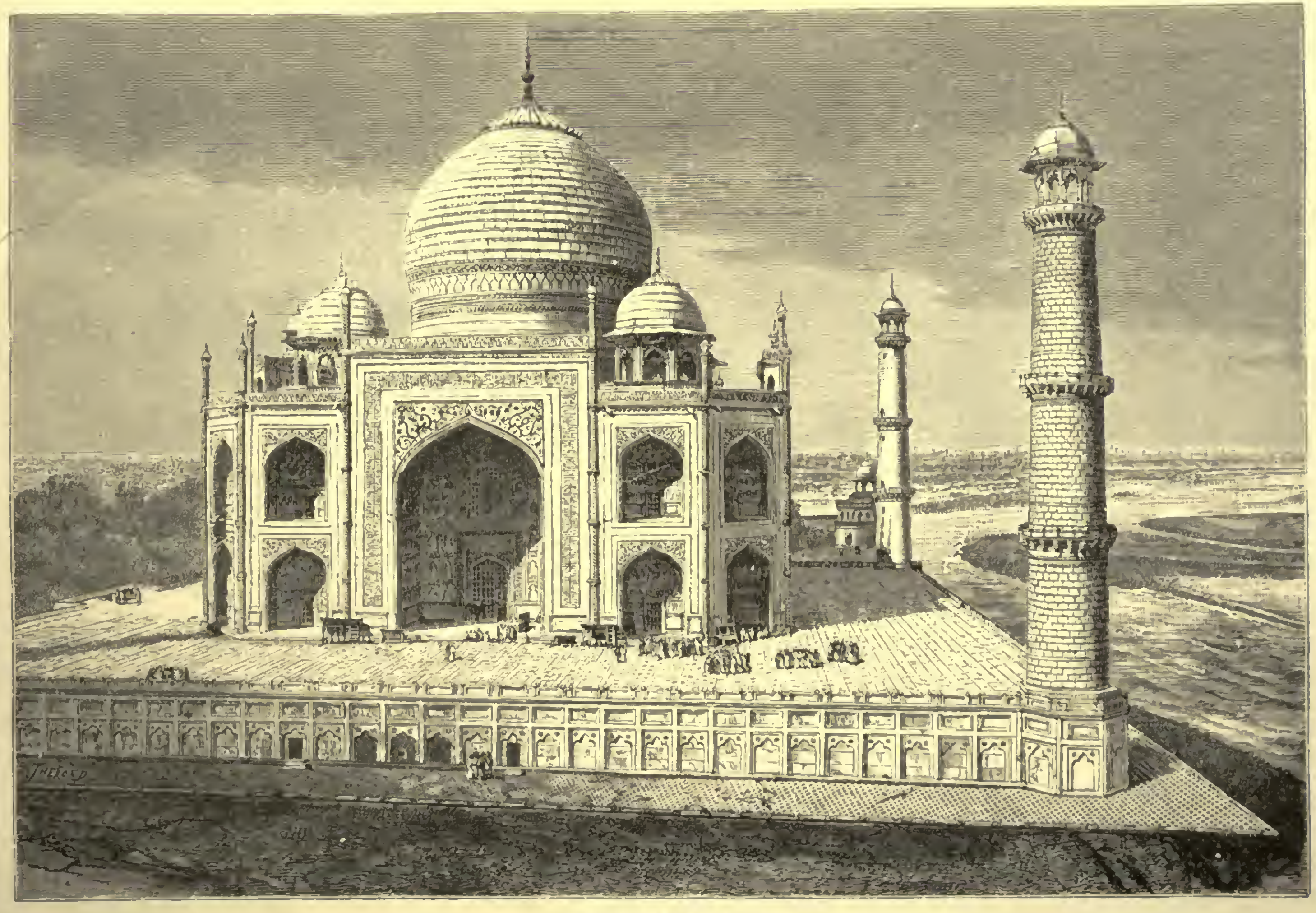
Agra, or *Akbarabad,* which stands on a winding of the Jamna, 30 miles south-east of Muttra, is scarcely 350 years old. But having been chosen as a residence by Baber, and as the imperial capital by Akbar, it soon attracted a large population, and, in spite of frequent disasters, is still next to Delhi the first city in the Upper Ganges basin. A few traces of a town previous to Baber's time are seen on the right bank of the Jamna, and the present enclosure is surrounded by extensive waste spaces. The heaps of ruins and fragments of walls attest the former importance of the place. The present city, reduced by one half since the time of Akbar,

Fig. 92.—Agra, Muttra, Fatehpur Sikri.

Scale 1 : 600,000.

12 Miles.

but flanked on the south by the British cantonments, has at least preserved most of the handsome buildings which make it the pearl of Indian cities. The red sandstone walls of the fort, with their white marble carvings and towers, rise nearly 70 feet above the banks of the stream, and within their circuit of 2,650 yards they contain, besides the palace, now a barracks, several structures still noted for their pure style, their bright marbles, and graceful arabesques. Over against the entrance of the fort the Jamna Masjid, or "Grand Mosque," raises its three majestic naves above an elevated terrace, while the series of fine monuments is completed within the enclosure by the famous Pearl Mosque, built entirely of



THE TAJ MAHAL, AGRA.

white marble. This edifice, although of moderate size, is one of the most imposing in India, thanks to the solemn harmony of its naves and the pitch of its arches. Beyond the ramparts there are some magnificent imperial tombs, conspicuous amongst which is that of Akbar, lying to the north near Secundra. With its minarets, kiosques, avenues, this tomb covers a large space, and, like most structures of the period, is built of red sandstone, and richly ornamented with exquisite marble sculptures. But the marvel of Agra, and one of the gems of art of world-wide fame, is the admirable Tajmahal, the tomb raised by Shah Jahan to his wife Arjaman Benu, better known by the title of Mumtaz, the Honoured. As the word Parthenon immediately suggests the ideal type of the Greek temple with its peristyle, friezes, metopes, and sculptures, the name of the Tajmahal conveys the idea of the most finished monument of Persian art, with its lofty pointed portals, enframed in a rectangle of arabesques, its carved cupola and graceful minarets. Built entirely of pink sandstone and white marble, the Tajmahal glitters all the more by contrast with the sombre foliage of the surrounding cypresses. With the harmony of its lines it combines a lavish wealth of costly materials and exquisite details, although many of the precious stones decorating the surface, together with its chased silver gates, were carried off by the Mahratta invaders. The chief industries of Agra are still those which its artisans learnt during the erection of this sumptuous monument—marble inlay work, gem setting, the preparation of mosaics. The school of workers in mosaics at Agra was founded by the Bordeaux artist Austin, on whom the natives conferred the title of Nadir el Asur, the "Prodigy of the Age."

About 21 miles farther west stands *Fatehpur*, the "City of Victory," former rival of Agra, and for a few years capital of Akbar's empire. It occupies the extremity of a red sandstone ridge, which supplied the materials for its buildings, but the remains of the old city, or rather the two villages of Fatehpur and *Sikri*, are now almost lost within the enclosures, some 5 miles in circumference. Most of the monuments, however, raised by Akbar and Jehanghir, are still in an almost perfect state of preservation. Conspicuous amongst them are the imperial palace, the tomb of the recluse Selim, the Panjmahal, a sort of pyramid formed by five superimposed colonnades, the Elephant Portico, the Antelope Minaret, and the Women's Palace.

Below Agra some large towns, such as *Etawah*, *Kalpi*, *Hamirpur*, and *Rajapur*, follow in succession along the banks of the Jamna, while in the fluvial basin are situated the old capitals *Jalaon* and *Banda*. But the political changes, and especially the commercial revolution brought about by the railways, have displaced the stream of traffic from the Jamna towards the Ganges. Banda, formerly the great depôt of the Bundelkhand cottons, is a decayed place, having been deprived of its trade by the port of *Rajapur*, which in its turn has been replaced by the railway stations between Allahabad and Cawnpore.

The fertile plains of Rohilkhand, stretching south of the Kumaon Hills between the Ganges and Gogra Rivers, are covered with towns surrounded by mango and bamboo thickets, and commanded by old forts attributed to the Bhars, former

rulers of the land, but rebuilt by the Afghans, or Pathan Rohillas, that is, "Highlanders." *Bareli* (*Bareilly*), the largest of these towns, originally a military station founded about the middle of the sixteenth century, has preserved its essentially strategic character, and has little to show except its fort and cantonments. *Najibabad, Nagina, Bijnor, Amroha, Moradabad, Sambhal, Chandausi, Budaon, Sahaswan,* and the other towns of Rohilkhand nearly all resemble Bareli in their uniform structure—mere groups of houses which have rapidly increased with the development of agriculture in this part of the Gangetic basin. Moradabad and Chandausi are large centres of the sugar industry, while Najibabad, lying nearer to the hills, trades chiefly in timber. *Rampur* alone, capital of a petty native state, has preserved a certain originality, and its shawls and damasks are highly esteemed throughout the peninsula.

Shahjahanpur, the chief station and largest town between Bareli and Lucknow, has become a thriving commercial mart at the expense of its neighbour *Farrukhabad* on the Ganges. The latter may be regarded as forming a single town with the British military station of *Fatehgarh,* whose fort commands the passage of the Ganges at this point. Another important place west of Farrukhabad is *Mainpuri,* on the route to Agra. But *Kanoj,* formerly the most celebrated city in this region, is now a decayed place. For nearly 600 years down to the end of the third century of the old era it was the capital of the most powerful Aryan kingdom in India, and when Mahmud the Ghaznevide came to lay siege to it in 1016, it still "raised its head to the skies," recognising no rival for strength and solidity. The citadel, which encloses the whole of the modern town, appears to have been one of the most formidable in India; but its strategic importance disappeared when the Ganges shifted its course 4 miles farther west, leaving Kanoj on the banks of the insignificant Kali-naddi, or Chota Ganga, that is, "Little Ganges." Most of the space enclosed by the old walls is dotted over with villages, varied here and there by ruins of temples and mosques. According to a local tradition, all the Brahmans of the Gangetic delta descend from families resident in Kanoj in the ninth century.

Cawnpore (*Kanpor, Kantipur*), one of the most modern places in India, has completely eclipsed the ancient city of Kanoj. A mere military post in 1778, it gradually rose in importance both as a strategic and trading centre, and is now one of the most flourishing cities in the empire. Cawnpore was the scene of the most sanguinary struggles and massacres of the Sepoy mutiny in 1857. Here the arch-rebel, Nana Dundhu Panth, better known as Nana Sahib, caused the British troops to be butchered after their capitulation, and then threw into a well the women and children of the garrison. For these atrocities a terrible retribution overtook the insurgents, after being twice driven from Cawnpore, and the memory of these fearful deeds still separates conquered and conquerors. No native is even now allowed to penetrate to the interior of the somewhat tasteless monument which has been raised over the mouth of the fatal well. The English quarter, which stands on the right bank of the river, here crossed by a railway bridge on the Lucknow line, is completely separated from the native town by parks, gardens,

and manœuvring-grounds. Close by is an industrial suburb, with some cotton-spinning mills.

Lucknow (*Laknau, Lakhnao*), capital of the ancient kingdom of Audh, which became a British province in 1856, is also a modern place, dating only from the sixteenth century. The site, however, had previously been occupied by a Rajput village standing on an eminence sacred to Sesnag, the "thousand-headed snake who bears the world." In the time of Akbar, Lucknow had already become one of the

Fig. 93.—Lucknow and its Environs.
Scale 1 : 240,000.

6 Miles.

finest cities in the empire, but it acquired no exceptional importance till the eighteenth century, when it became the residence of an independent dynasty. At present it is the fourth city in India for population, and is in some respects still regarded by the Hindus as a metropolis. But it has lost much of its importance and has ceased to be the centre of taste, fashion, music, and general culture since the revolt of 1857. In that year the English garrison, driven from the interior, had to take its stand in a fortified garden in the neighbourhood, while the city was occupied by 30,000 Sepoys and 50,000 volunteers, with 100 guns. The relief of the

garrison by Havelock and the subsequent rout of the rebels is perhaps the most memorable military event in the history of the war. Since then the European population has become more numerous than in most other peninsular towns, numbering in 1872 as many as 4,222, exclusive of Eurasians.

From a distance Lucknow presents a more imposing appearance than most other places. Seen amidst the foliage shading the course of the Gumti, the gilded domes, minarets, and belfries of its mosques and tombs seem to hold out promise of a second Agra, but a closer inspection dissipates all this architectural parade. Most of the palaces are vulgar plagiarisms of Hindu monuments, decorated with ornaments borrowed from all styles, and painted in the gaudiest of colours. Here Corinthian capitals support Persian arcades; there Italian villas are capped by pointed tiaras; elsewhere the worst English imitations of Greek and Roman monuments are, in their turn, imitated by the native builders. And it was to erect such monstrosities that the resources of the State were squandered for over half a century, while its ten million subjects were exposed to the most grinding oppression, until the government of the country was taken over by the East India Company. Nevertheless, some of the older buildings are not lacking in a certain character. The Imambara, or "Holy Place," now converted into an arsenal, and stripped of nearly all its sculptures, is a noble palace, with graceful and simple proportions, approached by a massive gateway of imposing appearance. The palace of the Residency, the strategic centre of the city and the converging-point of the avenues radiating in all directions, is also a handsome building, while the commercial quarter contains several numerous elegant houses with carved balconies, and coated with a species of stucco, brighter than marble itself. One of the most curious structures in Lucknow is the La Martinière College, so named from the French General Claude Martin, who built it in the hybrid Italian, Hindu, and Persian style adopted by the raja of Audh for his own palaces. The three cities of Lyons (Martin's native place), Calcutta, and Lucknow, were named by him as his heirs, and in each of them a college perpetuates the memory of this eccentric soldier of fortune.

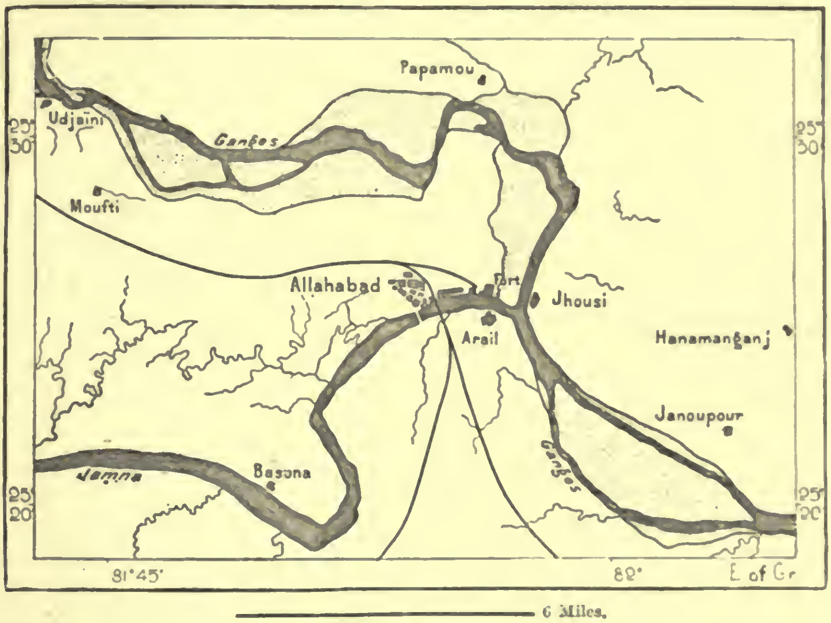
Besides Lucknow, which lies in a rich district called the "Garden of India," there are but few towns in Audh, nor have any of them more than a local importance as stations and markets. Such are *Sitapur*, *Rai Bareli*, *Bahraich*, *Khairabad*, and the ancient *Shahabad*. *Faizabad*, the chief town next to Lucknow, occupies the site of the city which gave its name to the kingdom. The ancient *Ajodhya* (*Audh*), founded by Manu, "the father of men," formerly capital of the kingdom of Kosala, and residence of the "Solar" king, Dasaratha, father of Rama, has preserved no vestige of the monuments whose splendour is sung in the Ramayana. Even its old Buddhist monasteries have disappeared, for its Jaina temples are all of recent origin. The Mohammedan mosques erected after the conquest are in ruins, but they mark the spots of all others most hallowed in the eyes of the Hindus, where Rama was born, where he celebrated one of his great sacrifices, where he died. The annual fair of Ajodhya is said to attract half a million of persons, although the modern city is much smaller than its neighbour, Faizabad, lying farther west,

on the right bank of the same river Gogra. Both of them find ample room in the vast space of about 100 square miles, said to have been covered by the ancient Ajodhya. The present importance of Faizabad is due mainly to the position it occupies between Benares and Lucknow.

Allahabad, the "City of God," which the Hindus call *Prayag,* from the "confluence" of the Ganges and Jamna at this point, has been chosen by the English as the capital of the North-West Provinces. The selection was due to its strategic and commercial position at the converging-point of the main routes from Audh, Nepal, Delhi, the Panjab, the Central Provinces, and the Arabian Sea. Here also the North Indian trunk line of railway has its chief central station, whence it radiates towards Calcutta, Bombay, and Peshawar. But

Fig. 94.—Allahabad.

Scale 1 : 380,000.



this great administrative and commercial centre has been shorn of some of its former architectural splendour. The fort, which stands at the confluence, on the site of structures dating from legendary times, has lost the towers erected here by Akbar, although it still comprises a fine palace, now transformed to an arsenal, besides some remnants of older buildings. A pillar standing in the garden bears the famous proclamation issued by the Buddhist Emperor Asoka two hundred and fifty years before the vulgar era, and this inscription is followed by two others commemorating the victories of Samudragupta four centuries thereafter, and the accession of Jehanghir to the throne of the Great Moghul. Near this pillar is the entrance to a temple which alluvial deposits and débris have converted into catacombs. Here, according to the Hindu legend, the Sarasvati ends its mysterious course, and blends its waters with those of the Ganges and Jamna. In a court of

the underground temple are shown the remains of the trunk of a banian tree, in whose branches dwelt a man-devouring demon. The ground was formerly covered with heaps of bones—the remains of pilgrims, who came in thousands to immolate themselves, in order to appease the hunger of the monster. In the time of Akbar, the Ganges having eaten away its banks to the foot of the sacred tree, the victims found it more convenient to drop from its branches into the stream below. Although still one of the holy places of India, Allahabad has, at present, certainly lost much of its prestige in the eyes of the Hindus, doubtless owing to the guns which now appear in the embrasures above the banks of the two sacred rivers. But although the fair at the beginning of the year attracts fewer traders and pilgrims than that of Ajodyah, as many as 250,000 have occasionally encamped on the plain skirting the right bank of the Ganges above the confluence.

Like all the administrative centres of the empire, Allahabad consists of two cities, one containing the English barracks, villas, parks, and gardens, separated by a wide space from the other, occupied by the natives. In the English quarter, near the fort and close to the Ganges, is situated the recently founded Central College, a sort of university for all the North-West Provinces. Above the city the Jamna is crossed by an iron bridge over 3,300 feet long, but since the opening of the railway steamers have ceased to ply between Allahabad and Calcutta.

Below the confluence the first large town on the main stream is *Mirzapur*, whose fine ghats, domed temples, towers, and richly sculptured palaces produce an imposing effect from the river. Before the opening of the railway Mirzapur was the first corn and cotton mart in India, but since then it has been largely superseded as a trading centre by Allahabad, Cawnpore, and Delhi. But its local industries—chiefly copper ware, carpets, woven fabrics of various kinds, and lacquer ware—are still flourishing. The houses, like those of Benares, are built of excellent sandstone from the *Chanar* quarries, situated lower down on the banks of the Ganges. On the rock of Chanar, famous in Hindu mythology, and forming a last spur of the Vindhyas, stands a famous citadel, which the English have converted into a state prison.

Benares, or *Kasi*, the ancient *Varanasi*, is the metropolis of the Brahman religions, a city holy beyond all others, the mere sight of which suffices to remove the heaviest burden of sins. The very saints themselves return at times on earth in order to complete their purification at this spot. From the earliest Aryan epoch Benares already appears as a city of sanctuaries. Here Sakya-Muni proclaimed his doctrine, and for the next eight hundred years it remained the chief centre of Buddhism. Then the Brahmans returned, and rebuilt their pagodas, which had, in their turn, to make room for the mosques of the Mohammedan conquerors. At present the city contains over 1,700 temples, mosques, and lesser sanctuaries, besides the altars, shrines, statues, and holy images set up at the corner of every street. Churches and chapels of various Christian sects have also been built by the missionaries, and the religious toleration now everywhere proclaimed throughout the British dominions has even allowed a Buddhist temple to reappear on a spot where its half Chinese architecture now forms a striking contrast with the sur-

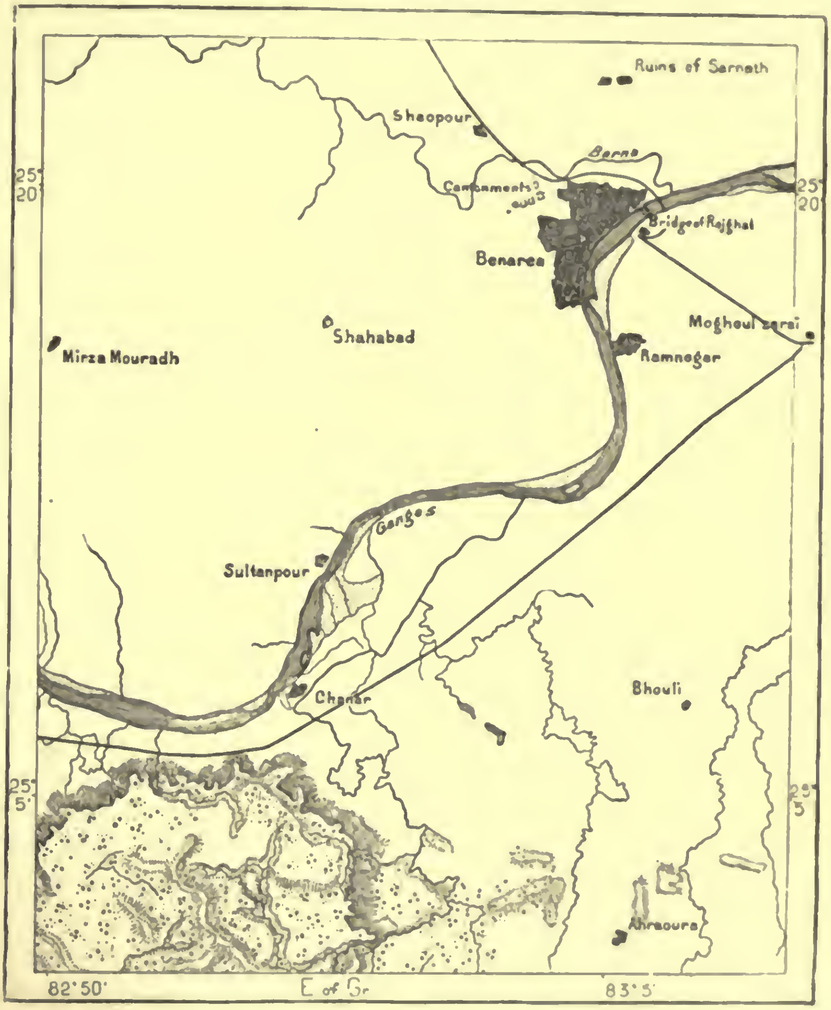
BENARES—VIEW TAKEN FROM THE GHATS.

rounding mosques and Brahman pyramidal temples. Amongst the ruins of topes situated at *Sarnath*, nearly 4 miles to the north, and probably twenty-four centuries old, conspicuous is the Dhamak, or Dharma—that is, the "Law"—a solid mass 110 feet high, encircled by a richly carved plinth. It marks the exact spot where the divine Buddha first "set the wheel of the Law in motion."

Since the Buddhist epoch Benares has been gradually displaced southwards. At that time it lay north of the little river Barna, whence it takes its name, and

Fig. 95.—Benares.

Scale 1 : 340,000.



6 Miles.

where the ruins of Sarnath indicate its original site. Then it occupied the spot farther south, where now stand the barracks of the British military station, and at present its houses are crowded along the left bank of the Ganges. The interior is a labyrinth of narrow winding streets, rendered almost impassable by the crowds

with the pack animals, camels, horses, asses, and the sacred bulls. Even monkeys mingle with the multitude near some of the pagodas. The arcades, galleries, carved balconies, coarse frescoes, trees rooted in the walls, flowers at the windows and on the terraces, all combine to impart a special physiognomy almost to every house. Seen from the river, which here develops a magnificent crescent 3 miles long, this unique city unfolds a superb panorama of palaces, temples, towers, and cupolas of a thousand different forms, some solid and massive, others fretted, gaped, or leaning from the perpendicular. The ghats, descending 100 feet from the edge of the cliff down to the river, are always crowded with pilgrims and fakirs indulging in their self-imposed macerations, or performing their ablutions in the sacred stream. At the foot of one of these ghats the dead, enveloped in white shrouds and tossing on the troubled waters, await their turn to be cremated on the adjacent pyre. During the great feasts the broad stream, with its hundreds of light craft and steamers, is scarcely less animated than the streets themselves, and at sunset the vast crescent of palaces, illumined with a thousand lights, presents a marvellous picture. All these buildings are overtopped by the observatory, erected here by Jaising at the end of the seventeenth century.

Depending chiefly on the alms of the pilgrims from every part of India, Benares is one of the least industrial places on the Ganges. It has even lost much of its population since the middle of the century, and will probably soon cease to be the largest city in the North-West Provinces. The chief local industries are brocades and shawls, jewellery, and filigree work. Large quantities of cotton stuffs are imported in exchange for sugar, indigo, and saltpetre. The main railway passes east of the city over the first permanent bridge above the delta—a viaduct with seven piers and a total length of 850 yards. At the other end stands the castle of *Ramnagar*, residence of the nawab, who still retains the title of Maharaja of Benares.

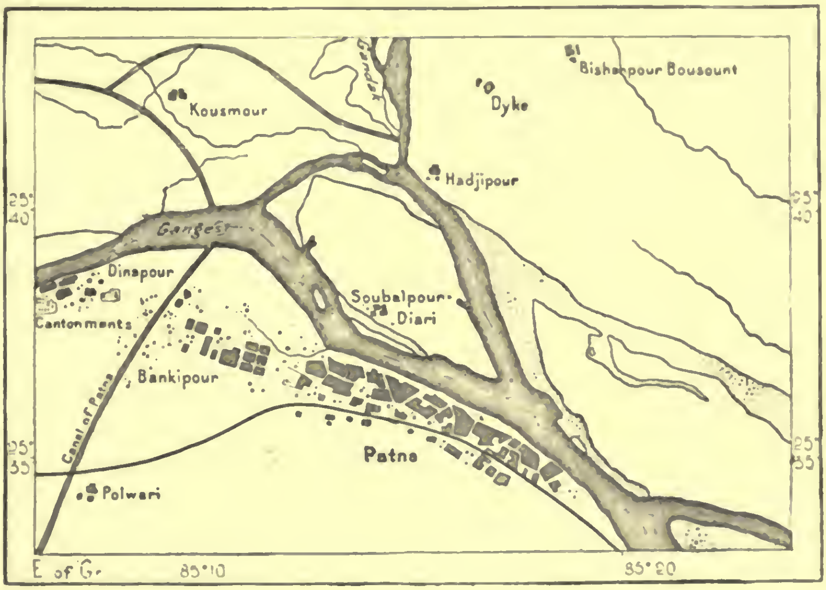
Ghazipur, lying, like Benares, on the left bank of the river below the confluence of the Gumti, has acquired considerable importance as a commercial centre, and the Government has here erected vast works for the preparation of opium. Ghazipur is also noted for its essence of roses, and exports tobacco, saltpetre, and carbonate of soda to Calcutta. *Chapra*, on the left bank, at the junction of the Gogra and not far below the confluence of the Son, loses much of the advantage it might otherwise derive from this convenient position at the converging-point of three large river valleys by its low position exposing it to frequent inundations. The navigable channel has also been recently displaced to a distance of over a mile, while the stream of traffic has been diverted by the railway, which passes by *Arrah* on the opposite side of the Ganges. Arrah has thus also inherited the trade of *Sasseram*, which lies in the hilly district farther south. North of the Ganges are the agricultural towns of *Jaonpur*, *Azamgarh*, and *Gorakpur*. Near the last mentioned, on the banks of the Gogra, probably stood the famous *Kapilavasta*, birthplace of Buddha.

Between Benares and Calcutta the largest and most flourishing place is *Patna*, that is, the "City," in a superlative sense. The Mohammedans now call it

Azimabad, and in the Buddhist times, over 2,000 years ago, it bore the name of *Pataliputra*, changed by the Greek Megasthenes into *Palibothra*. At that time it was the "chief city in India," and with its suburbs it is still one of the largest in Asia, its houses, dockyards, and warehouses stretching for over 12 miles along the right bank of the Ganges. On the west are the military station, cantonments, parks, and manœuvring-grounds of *Dinapur*, south of which succeeds the administrative centre, *Bankipur*, occupied almost exclusively by Europeans and their households. Patna, rather than Chapra, must be regarded as the true converging-point of the natural highways in this region. It lies below the junctions of the Gogra and Son with the Ganges, while it faces the confluence of the Gandak flowing from the richest valleys of Nepal. It is, moreover, now connected by two

Fig. 96.—Patna.

Scale 1 : 285,000.



6 Miles.

railways with Calcutta, and serves as the central terminus of a network of secondary lines here branching off from the main system.

Notwithstanding its ancient historic memories, Patna is destitute of any monuments of the past. Its chief architectural curiosity is a granary, which the English have never utilised except to display its extraordinary acoustic effects. The more recent depôts of opium, wheat, oils, and other produce are remarkable only for their size; but in the district are found some of the most interesting religious structures and ruins in India. The region south of Patna was pre-eminently sacred to Buddhist worship, while the Brahmans have skilfully turned to their profit the ancient sanctity of the temples and monasteries of the rival cult. According to the local legend, here lies buried a spirit cursed by the gods, whose

only crime was his too great love of mortals, whom he saved too easily from hell. This is the vanquished spirit of Buddhism, whom the victorious gods have induced to abstain from shaking the earth by promising salvation to all pilgrims worshipping in the temple built over his body. A railway, traversing the industrious town of *Jahanabad,* now connects Patna with the holy city of *Gaya,* so named from the mythical being here confined below the surface. Gaya is encircled at intervals by forty-five sacred stations, at each of which the pilgrims must present their offerings,

Fig. 97.—Behar and Boddh Gaya.

Scale 1 : 600,000.

12 Miles.

and no less than thirteen days are required to perform all the ceremonies of purification. Of all the stations the most meritorious is *Buddh Gaya,* or *Boddh Gaya,* on the river Lilajan, the "Immaculate," six miles south of Gaya. Here Sakya-Muni resided for five years, absorbed in contemplation beneath the shade of a banian, the decayed trunk of which is still shown. The *bodhi drum,* or "Tree of Knowledge," as this tree is called, is supposed to have become, in a slightly modified form, the collective name of all the sacred monuments, although it is derived by some etymologists from the epithet of Buddha, or the "Sage," attributed to the reformer

The temple, restored in 1805 and again in 1877 by the envoys of the king of Burma, rests on the foundations of a building erected over 2,400 years ago. It still preserves some curious sculptures of the time of Asoka, which reproduce not the Aryan type, but features resembling those of the present Kolarians. Near this temple are also the ruins of the palace inhabited by Asoka and his successors on the throne of Magadha.

Gaya is not merely a religious city, but also does a large trade in sugar. *Behar* also, lying south-east of Patna, has become far more important for its trade and industry than as a place of pilgrimage. It gives its name, derived from *Vihara*, or "Monastery," to the whole province, of which the Tirhut division, north of the Ganges, yields large quantities of grain, opium, and other agricultural produce. Its tobacco and indigo are of the finest quality. *Bettiya*, *Muzaffarpur*, and *Dabangha*, the largest towns in the district, forward their produce to Calcutta by a network of railways constructed for the purpose of giving employment to the starving natives during the famine year 1874. These lines, fed by a large local traffic, converge on the Ganges over against *Barh*, one of the chief stations on the trunk line from Calcutta to Peshawar. *Hajipur*, also a busy place, may be regarded almost as a suburb of Patna, with which it is connected by the mouth of the Gandak. The cultivated tracts of North Behar are continually encroaching on the marshy terai district on the south frontier of Nepal, which is guarded by the military station of *Sigauli* on the route to Katmandu.

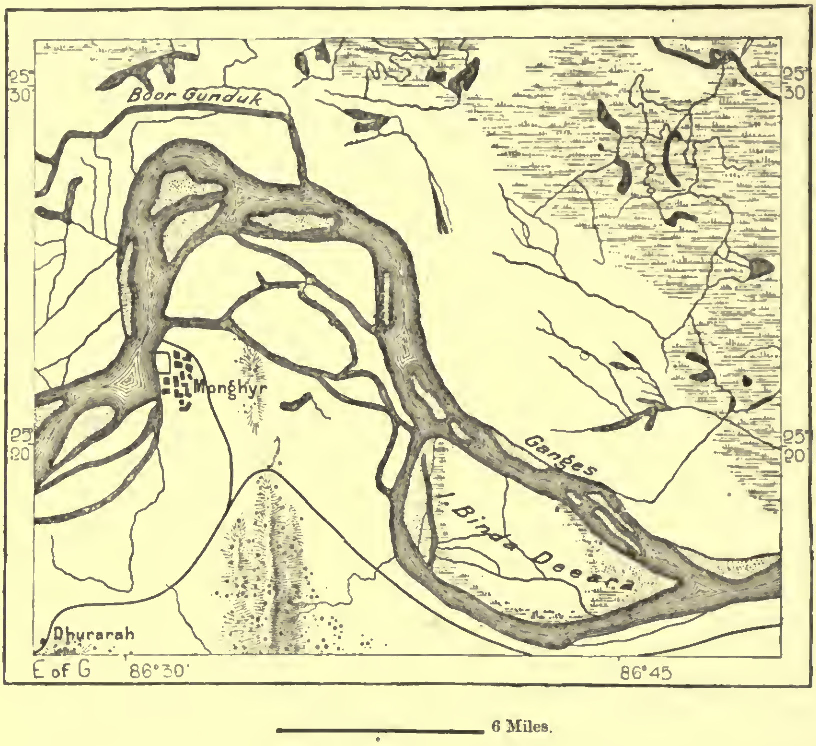
Monghyr, one of the busiest ports on the Ganges, presents a highly picturesque appearance, thanks to its rocky bluff crowned by an ancient fort, within which the European town has been built. At the foot of the rock is grouped the Hindu quarter, in the midst of a district which assumes the aspect of a wooded park from the mhowa (*Bassa latifolia*), whose blossoms supply food to men and animals. Nearly half a million of these plants grow in the district, yielding a yearly crop of about 100,000 tons of flowers. A still more commercial and populous place than Monghyr is *Bhagalpur*, which covers a space of nearly 2 miles along the right bank of the river. The surrounding country, with its innumerable Jaina temples, presents one of the most curious sights in India. As many as 540 temples formerly stood on the granite tableland of the Mandar (Mandar ghiri) Hill, which rises 650 feet above the surrounding plains some 30 miles south of Bhaghalpur. The whole mountain is completely encircled by the coils of a snake cut in relief on the rock. But of older buildings nothing remains except the agates and other fine stones still strewing the ground.

The ancient city of *Colgong* (*Kohalgaon*), lying below Bhaghalpur, and till recently doing a large trade with Calcutta, has been ruined by the capricious current of the Ganges, which by shifting its course has obliged most of the inhabitants to remove farther down to the modern town of *Sahibganj*.* North-west of this place, and on the opposite side of the river, stands the thriving station of *Karagola*, whose fairs attract large numbers of dealers. These fairs are held on a vast low-lying alluvial plain, where the crowds have been more than once decimated

* Shipping of Sahibganj (1877), 43,020 boats; trade, £450,000.

by the cholera. *Rajmahal,* the first town to the south of the great bend formed by the Ganges round the Pahariah Hills, has also frequently suffered by the displacements of the stream. Throughout the greater part of the seventeenth century this place, which at that time stood near the chief branch of the Ganges, was the principal town in the region of the delta. In the middle of the present century it was still a populous and flourishing place; but in 1863 the channel shifted farther east, and the "Garden of Kings" became a mere aggregate of huts

Fig. 98.—Monghyr.
Scale 1 : 380,000.



surrounded by ruins. In 1880 the Ganges returned to its old bed, and Rajmahal at once recovered its wonted prosperity.

Maldah, lying at the confluence of the Mahanaddi with a branch of the Ganges, has lost all the importance it formerly possessed as a French and Dutch factory. It has ceased to produce the substantial cotton goods known as *maldi,* and is now noted chiefly for its delicious mangoes. The English factory, founded farther south in 1686, has on the contrary become one of the secondary towns of Bengal, under the name of *Angrazabad,* or *English Bazaar.* In this treacherous region, where the very ground disappears with the fickle stream, the fate of cities changes far more rapidly than on the more stable lands of the interior. Here are still to be seen the famous ruins of *Gaur* and of *Panduah,* residence of the Afghan rulers towards the end of the fourteenth century. Its edifices, being all built of stone, are in good repair, and are extremely interesting as examples of Afghan architecture

in Bengal. On the other hand, the very site of *Tondan* or *Tangra*, which succeeded Gaur and Panduah as the capital, has not yet been identified. Farther north, the towns of the alluvial plains traversed by the torrents from Nepal and Sikkim also shift their position with the shifting streams. Thus *Purniah*, formerly one of the chief centres of the jute trade, has had to be abandoned since the erratic Kali Kosi has left nothing but noxious swamps along its river front.

Below the head of the delta a few towns follow in succession along the alluvial plain of the Padmah, the great branch of the Ganges which flows to the Meghna. Here *Rampur Baoleah* is a much-frequented riverain port, exporting chiefly silk, rice, and jute, and importing sugar, salt, and woven goods. Its exchanges amounted in 1877 to a total of over £540,000. But *Badnah*, although capital of a district, has lost nearly all its trade since the channel has been displaced farther south. Between these two towns a steam ferry connects the two sections of the railway between Calcutta and Darjiling. But trade has naturally been diverted to the small arm of the Ganges chosen by the English for the site of their imperial capital. On the same western branch of the river the rulers of Bengal had already fixed their residence at the head of the delta in the eighteenth century. *Murshidabad*, the seat of government at that time, soon became one of the great cities of the world. When Clive reached it in 1759, after the decisive victory of Plassey, it seemed to him as large, populous, and wealthy as London, with the difference that the great landowners of the district were far more opulent than those of the Thames Valley. Murshidabad was then over 30 miles in circumference, and even after the establishment of British rule it still preserved many of its privileges, together with the official title of capital, till the year 1790. From that time forth it diminished rapidly in importance and population.* But it still remains the official residence of the Nawab, who enjoys a government pension of £160,000, and who here possesses some magnificent palaces. One of these, recently built in the Italian style, contains a carved ivory throne, a masterpiece of local art, and another is mainly constructed of costly materials taken from the monuments of Gaur. Almost embowered in foliage and bamboo thickets, the place presents the ordinary aspect of a city only along the river bank and in the quarter devoted to the silk-spinning industry. But the stream of traffic flows chiefly northwards to the towns of *Jiaganj* and *Azimganj*, which face each other on either side of the Bhagirati. In the commercial world Murshidabad is known only for its banking operations.

While this place has fallen into decay, others in the district have disappeared altogether. Of the ancient Buddhist city of *Badrihat*, on the west bank of the Bhagirati, nothing remains but ruins, while the site of *Kasimbazar* is indicated only by some hovels grouped round the dwellings of a few wealthy natives. This town, which lies 3 miles to the south of Murshidabad, was the most flourishing place in Bengal during the seventeenth century. From it the very river took its name, while the delta was known as the "Island of Kasimbazar." In 1813 trade

* Population of Murshidabad during the 19th century :—165,000 in 1815 ; 146,176 in 1829 ; 124,804 in 1837 ; 46,140 in 1872.

had already been to a great extent diverted towards the new town of *Barhampur* (*Brahmapur*), where the English had established their military cantonments, when a sudden shifting of the Bhagirati left Kasimbazar in the midst of the swamps. The whole population had to take to flight, and a large spinning factory belonging to the East India Company was abandoned. The battle-field of *Plassey* (*Palasi*), south of Barhampur, was on the same occasion completely washed away by the inundations.

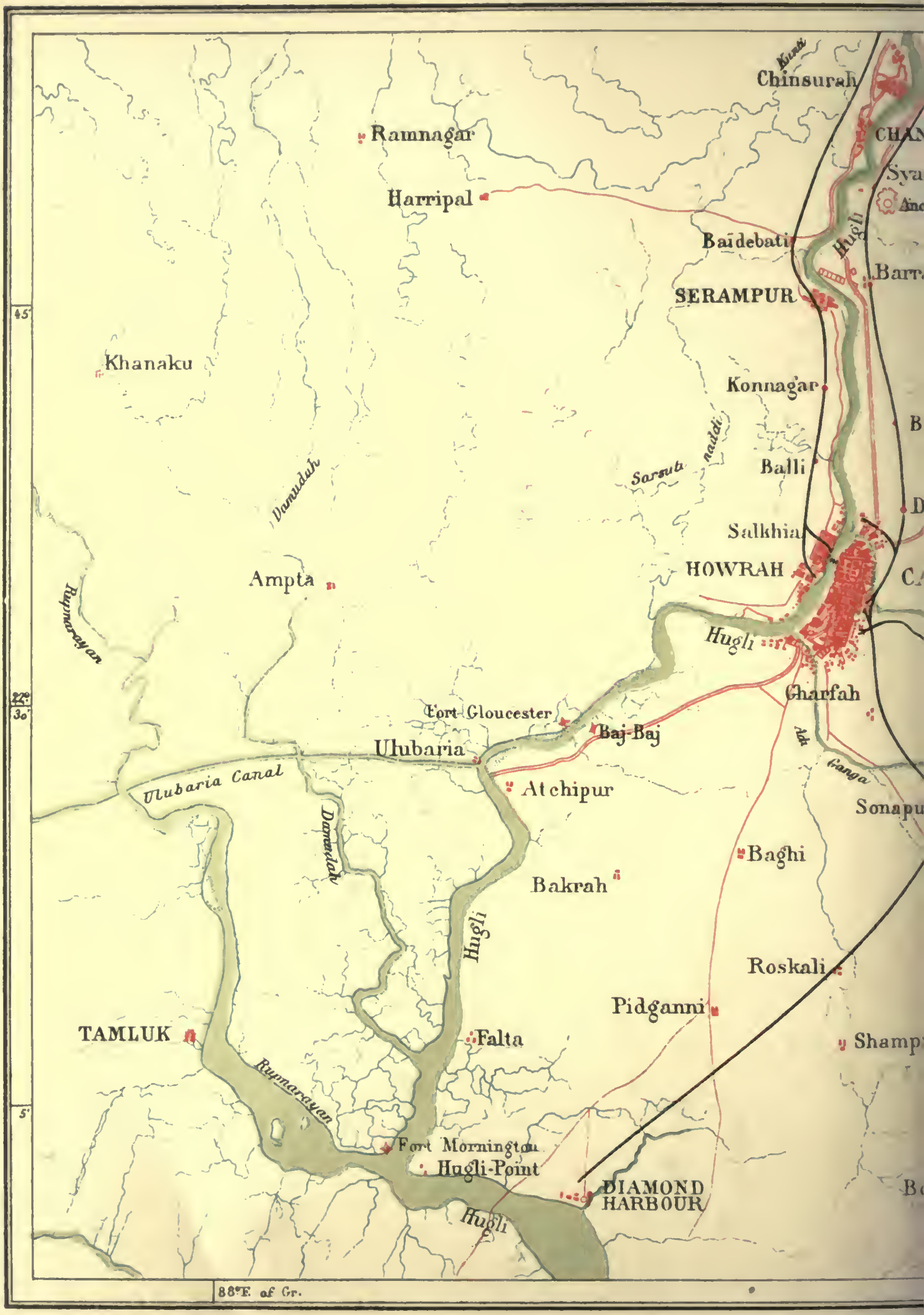
Nadiya, one of the precursors of Murshidabad as capital of Bengal, was in the eleventh century the residence of the last Hindu sovereign who ruled over this region. Originally founded on the right, it now lies on the left bank of the treacherous stream, and it has in recent times been altogether eclipsed by *Krishnagar*, which is situated some 6 miles farther east on the Jellinghi. The towns of this district were formerly famous for their schools, and Krishnagar is even still noted for its Sanskrit college. Of *Tribeni*, also a seat of learning, nothing remains except its ghat. The name of Tribeni—that is, the "Three Rivers," from the confluence of the Ganges with two other streams—has remained unchanged for over one thousand eight hundred years, and it is mentioned by Pliny and Ptolemy as one of the chief marts of India.

At this point we enter the district of Calcutta. The ancient port of *Satgaon* or *Saptagram*—that is, the "Seven Villages"—was long the commercial capital of the delta. But the channel having become choked with mud, the Portuguese, who arrived in the year 1547, founded the town of *Hugli*; and the church and monastery of Bandel, still visible north of this place, are the oldest Christian buildings in the north of India. In 1629 the Emperor Jahanghir took Hugli by assault, captured the greater part of the Portuguese fleet, and either massacred the prisoners or compelled them to become Mohammedans. Next came the English in 1642, and, like the Portuguese, soon quarrelled with their guests. Hugli, the prize of victory, thus became a starting-point for fresh conquests. The Dutch had also established themselves at *Chinsurah*, which lay to the south of Hugli, and which was not ceded to Great Britain till the year 1826. At this point a permanent bridge over 1,200 yards long will soon connect the two lines of railway skirting the Hugli.

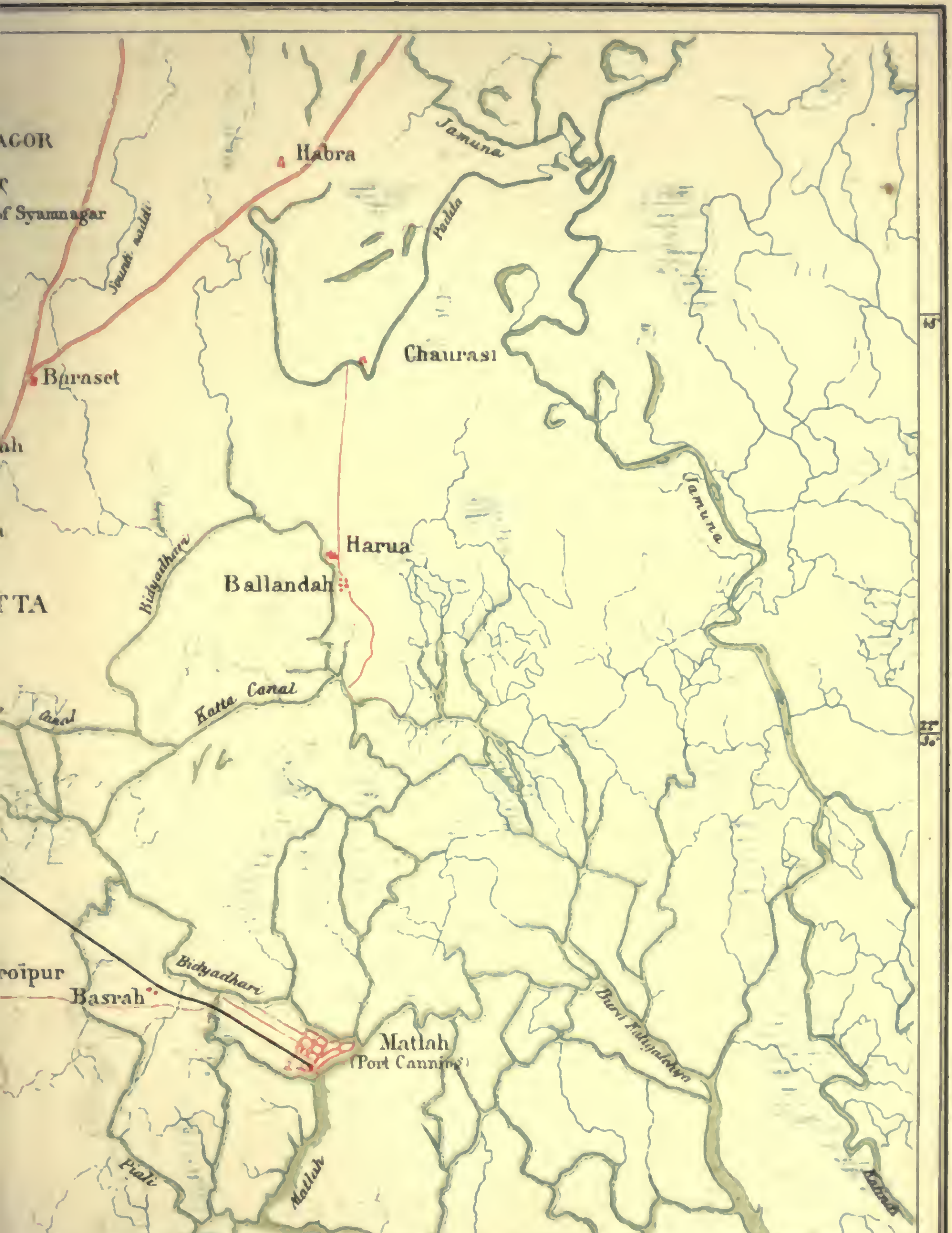
The French factory of *Chandernagor*—*Chondan nagar*—that is, "Sandalwood Town"—or *Chandra nagar*—that is, "Moon Town"—recalls the days when Dupleix contended for the supremacy of France in India. Occupied in 1675, and purchased from the Great Moghul in 1688, Chandernagor became a considerable place during the first half of the eighteenth century, but it was surrendered to the English by Terraneau in 1757. Ruined by the wars, the cordon of custom-houses encircling it, and by the silting of the river, Chandernagor nevertheless still remains one of the pleasantest places in Bengal. *Farashdunga*, or the "French Commune," occupies with its whole territory an area of no more than 2,350 acres, and its trade is insignificant since the French shipping has been obliged to stop at Calcutta.*

* Trade of France with the Hugli in 1878:—Imports to Calcutta, £261,000; exports from Calcutta, £2,136,000.

CALCUTTA


Chinsurah
Kunti
Ramnagar
Harripal
Baidebati
Hugli
SERAMPUR
Khanaku
Konnagar
Sarsuti naddi
Balli
Damudah
Salkhia
HOWRAH
Ampta
Rupnarayan
Hugli
Charfah
Fort Gloucester
Baj-Baj
Ulubaria
Adi Ganga
Ulubaria Canal
Atchipur
Damudah
Baghi
Bakrah
Hugli
Roskali
Pidganni
TAMLUK
Falta
Rupnarayan
Fort Mornington
Hugli-Point
DIAMOND HARBOUR
Hugli
45'
22°30'
5'
88°E. of Gr.

ENVIRONS



: 000

12 Miles

PLETON & Cº

All the trading nations of Europe were anxious to possess a factory on the great river of Bengal. On the west bank of the Hugli below Chandernagor the Danes had acquired the town of *Serampur*, which they renamed *Frederiksnagar*. But they sold it to England in 1845, and Serampur has now become a dependency of Calcutta, where numerous merchants have taken up their residence. This place was long the centre of the Protestant missions in India, and in the library of its theological college are preserved some rare Oriental manuscripts. On the left bank of the Hugli over against Serampur lies the beautiful park of *Barrackpur*, one of the residences of the Indian viceroys. This hybrid name of Barrackpur ("Barracks Town") indicates the neighbourhood of the military cantonments which have replaced the old fort of *Syamnagar*, erected here by the raja of Bardwan.

Calcutta, metropolis of the Anglo-Indian Empire, and next to Bombay the largest city in southern Asia, is of recent origin. In an official document of the year 1596 mention is made of the hamlet of Kalikota on the right bank of the river. But towards the end of the following century the English traders removed from this factory to the opposite side of the Hugli, where they were less exposed to the raids of the Mahrattas. Their warehouses and dwellings were erected on the site of the three villages of *Sutanati*, *Kalikota*, and *Govindpur*, and the name of the central village, devoted to the worship of the sanguinary Goddess Kali, ultimately prevailed. This term was by seafarers and strangers transformed to *Golgotha*, in allusion to the frightful mortality of the place, which was at that time surrounded by swamps, and which was partly below high-water level. At present an extensive system of drainage, fine plantations, and an abundance of pure water have rendered the district healthy enough. In 1871 the mortality was lower than in Naples, Florence, and many other European cities, although marshy tracts and paddy-fields, often under water, still stretch south and east of the city. Here the so-called "Salt Lake" of Dhappamanpur, occupying a space of 30 square miles, has become the receptacle of the town refuse, which is conveyed to this spot by a special line of railway. Since 1871 the mortality has again risen, and now exceeds the average birth-rate, so that the urban population has steadily diminished, while that of the rural districts has enormously increased.*

It was not without a struggle that the East India Company secured permanent possession of this watery district. In 1756 the citadel of Fort William was besieged and captured by Saraj-ud-Daula, Nawab of Bengal. The European prisoners to the number of 146 were shut up in the famous Black Hole, where not more than 23 lived through a night of indescribable horrors. The following year this outrage on humanity was avenged by an expedition from Madras under Clive and Admiral Watson, who reoccupied Calcutta, gained the memorable victory of Plassey, appointed a new Nawab, and obtained from him sovereign rights over the district. From this epoch dates the history of the modern city of Calcutta. South of the old fort Clive erected the new citadel of Fort William, which is nearly 2 miles in circumference, and which includes a whole town and gardens. North and east of the *maidan*, or public esplanade and reviewing-ground, were built those

* Death-rate of Calcutta: 1871, 23·9 per 1000; 1873, 25·8; 1877, 31·9.

pretentious edifices which have earned for Calcutta the title of "City of Palaces." The contrast till recently presented by this quarter with the adjoining native "city of mud" was most depressing. But broad open streets now admit air and light into the "black town," as it is called. Some fine houses have even sprung up here, while in the European district several thoroughfares are lined by buildings in simpler and better taste than those of the esplanade. Calcutta has also overflowed to the right or opposite bank of the river, where the suburb or town of *Haurah* is occupied chiefly by sailors, mechanics, and artisans of all classes. The two sides of the Hugli are here connected by a bridge of boats, which is opened two hours daily for the shipping. At intervals along the banks, access to the river is afforded by numerous ghats, constantly crowded by picturesque groups of natives of all ages and both sexes, who here assemble for their silent ablutions. The Nimtolah Ghat, north of the bridge, is specially set apart for cremations.

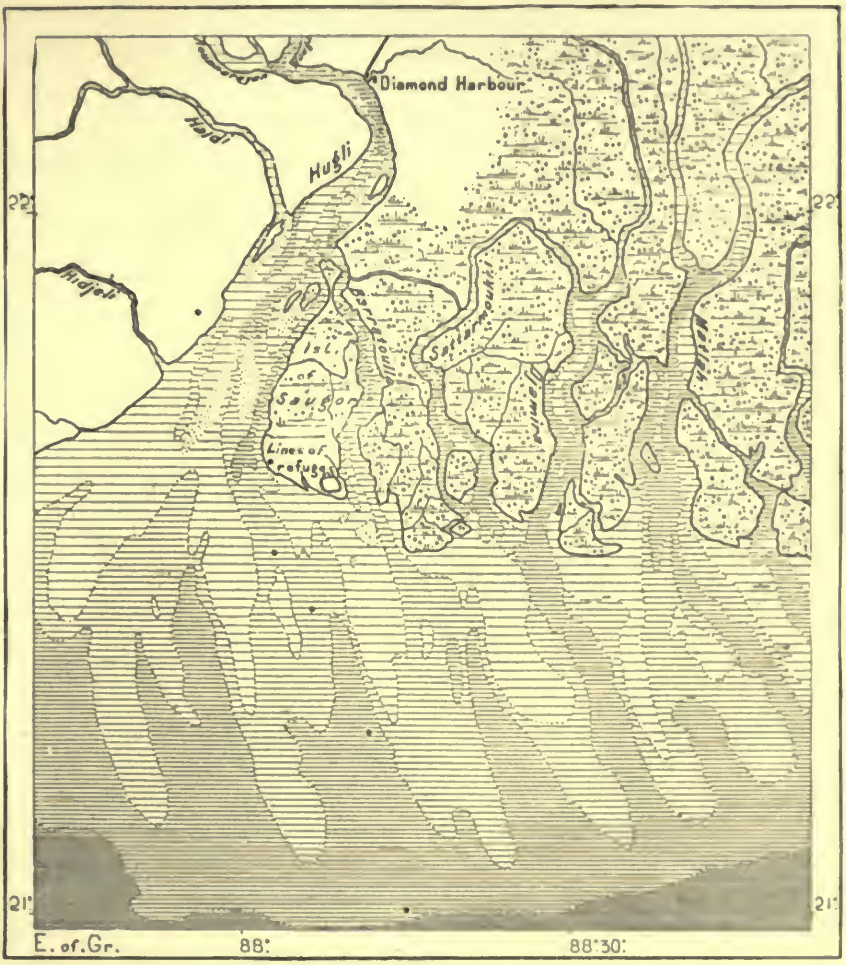
The choice made of Calcutta as capital of the Indian Empire clearly attests the foreign origin of its founders. Relatively to the whole Cis-Gangetic peninsula, it occupies quite an exterior position, as an emporium of trade rather than the seat of a political system, such as was Delhi, centre of the Moghul power. Even in Bengal itself, Calcutta is far from occupying the geographical position of a native capital developed by the concentrated energies of the nation. The head of the delta was the natural site for such a metropolis, and here, under the various Hindu and Mohammedan Asiatic dynasties, Nadiya, Kasimbazar, Murshidabad, and the other great cities of Bengal succeeded each other with the incessant shiftings of the stream at this point. But Calcutta is merely a trading station raised to political supremacy by foreign influences. Hence the question has frequently been discussed of removing the seat of government to Delhi, Agra, Allahabad, Jabalpur, or some other more central position. Bombay has also been suggested, on the ground of the exceptional advantages offered by it for furthering the relations with Europe. Mention has even been made of Nasik, at the north-west corner of the Dekkan, as occupying a healthy and convenient situation near the port of Bombay, and almost at the converging-point of all the main peninsular routes. Still Calcutta enjoys, if not the privileges derived from time, at least the vast resources acquired by invested capital. Through its lines of railway and navigation it is now in easy communication with all the provinces of Hindustan; while the conquests and peaceful annexations in further India have given it a somewhat central position relatively to the whole empire. It stands about midway between Aden and Hong Kong, and is nearly equidistant from Ceylon and Singapore. But since the establishment of the health resorts on the advanced sub-Himalayan Hills, the seat of government may be said to have acquired a nomad character. In summer the officials withdraw from Calcutta to Simla, which then becomes the centre of the empire, while Darjiling is temporarily constituted the capital of the Bengal Presidency.

During the last hundred years of its political supremacy Calcutta has been embellished by many stately buildings, such as the government palaces, the town hall, the law courts, post-office, mint, several clubs, cathedrals in Greek or Gothic

CALCUTTA—VIEW TAKEN FROM THE ESPLANADE.

style, more or less affected by local influences. Here have also been founded several important scientific institutions, including the Royal Asiatic Society of Bengal, whose publications, continued from the year 1788 to the present time, have become a vast depository of valuable papers bearing on Oriental studies. Its

Fig. 99.—Mouth of the Hugli.
Scale 1 : 1,200,000.



0 to 16 Feet. 16 to 32 Feet. 32 to 64 Feet. 64 Feet and upwards.

Lighthouses or Lightships.

30 Miles

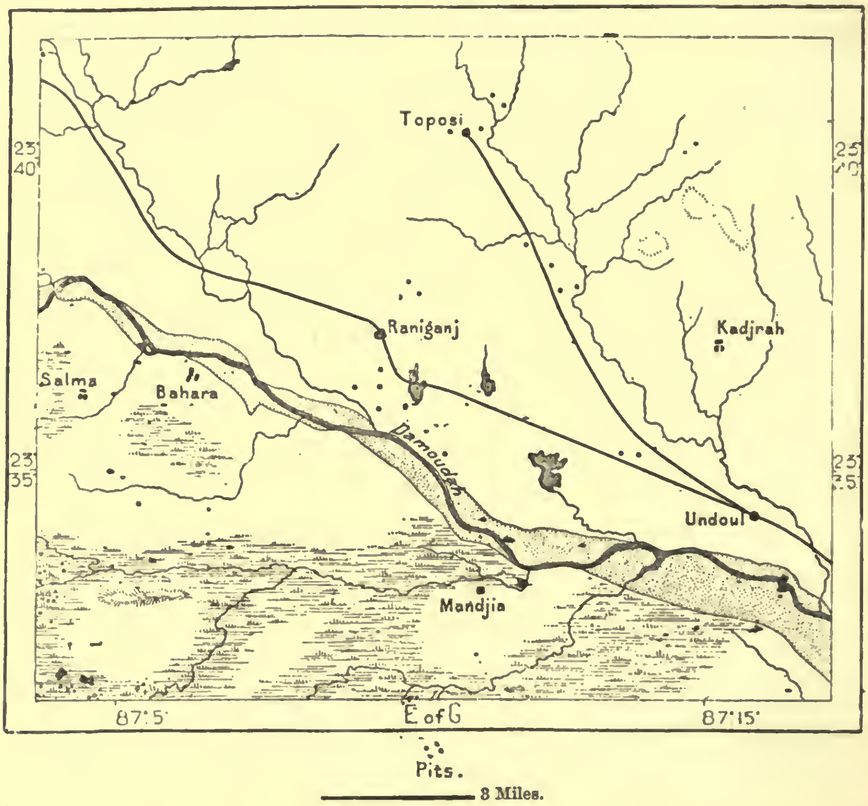
library has been enriched by some unique documents, while the Indian Museum contains a complete collection of Indian rocks and fossils, and notably the interesting remains of the tertiary fauna collected in the stratified deposits of Sivalik. Amongst the parks of Calcutta is a zoological garden, which, however, is less extensive than that of the ex-raja of Audh, whose estate extends for nearly two miles

along the left bank of the river below the city. On the opposite side are the Botanic Gardens, which cover a space of 270 acres, and which, notwithstanding the ravages of the cyclones, still contain some marvels of the vegetable world, such as a baobab from Senegal, with a circumference of over 50 feet. Under the management of Hosker, this garden, which was founded in 1786, has acquired great scientific importance, and its herbarium is at present certainly the most complete in Asia.

As an industrial city, Calcutta is inferior to Bombay, possessing little beyond the factories and workshops common to all large cities. But the suburb of Haurah on the west side already presents the aspect of a European manufacturing town.

Fig. 100.—The Raniganj Mines.

Scale 1 : 225,000.



Here are some extensive jute, cotton, and sackcloth weaving mills, while in the district there are several government industrial establishments, notably the Kosipur gun foundry above the city. For its trade and shipping Calcutta has become one of the chief ports in Asia. Its yearly exchanges are estimated at about £100,000,000, with a tonnage of 2,500,000, exclusive of the river and delta traffic. Some idea may be formed of this vast riverain movement from the fact that during the course of the year as many as 100,000 boats visit the port of *Khulna*, which occupies a central position amid the network of canals in Lower Bengal. Fearing the silting of the Hugli, the Calcutta merchants have recently connected the capital

with *Port Canning*, a new station on the Matlah estuary, which is from 25 to 180 feet deep, and not exposed to the bore. But foreign vessels have hitherto avoided this port, near which are the *Tarda* mines, which were visited by the Portuguese mariners before the foundation of Calcutta. North-east of this point is *Jessor*, or *Kasba*, which, though a small place, is the chief town of a district containing over 200,000 inhabitants.

From Calcutta to the sea, a distance of 75 miles, there are no more towns, which are here replaced by hamlets hidden in the foliage, by forts, signal-towers, and lighthouses. But west of the capital lies the populous basin of the Damudah (Damodar), which flows out of the Chota Nagpore Hills to the estuary of the Rupnarayan. Here the chief place is *Bardwan*, residence of a maharaja, but one of the unhealthiest places in India. The neighbouring town of *Bishnapur*, mentioned in the chronicles of the eleventh century as "the most famous city in the world," now presents little more than a mass of ruins, which cover a vast space. *Chandrakona*, *Bankura*, and the other towns of this district possess some local industries, of which the most important are silk weaving and metal works. But English capital has been chiefly attracted to the rich carboniferous basin of *Raniganj*, which contains at least 14,000,000,000 tons of available coal, and which already supplies two-thirds of the entire annual production of India. Mines have been worked here since 1777, but the quality is far inferior to English coal.* The best in India is yielded by the mines of *Karharbari*, near Mount Parasnath, in the Chota Nagpore uplands. Other coal-fields follow in succession along a line stretching through Hazaribagh and *Palamao* westwards to the valley of the Son. One of the chief advantages of Calcutta is its proximity to the only carboniferous basins which have any real economic value.

Notwithstanding the unhealthy climate of its marshy tracts, the population of Chota Nagpore has increased more rapidly than that of any other district in Bengal. *Hazaribagh*, noted for its pure and bracing atmosphere, is steadily increasing in importance as a summer retreat for the English merchants of Calcutta. At several points in this district, and especially on the slopes of Parasnath, tea plantations have already encroached on the jungle; but the idea of founding a health resort on the summit of this mountain has been abandoned. The plain stretching thence northwards, and traversed by the direct railway from Calcutta to Patna, contains the temples of *Deogarh*, consecrated to Siva, and frequented by more numerous pilgrims than the shrines of Parasnath.

West of Calcutta the only large place is the industrial town of *Midnapur*, which lies on the river Kasai, and which is connected by a navigable canal with Calcutta. *Tamluk*, on the right bank of the Rupnarayan, is the ancient *Tamralapti*, a royal capital and much-frequented port during the Buddhist epoch. The Chinese pilgrim H'wen-Tsang speaks of it in the seventh century as a large city abounding in fine monuments. But the silting of the river has cut off Tamluk from access to the sea, and reduced it to the condition of a large village, whose houses and temples are gradually sinking in the treacherous soil.

* Yield of the Raniganj mines in 1868, 564,930 tons; in 1879, 523,100 tons.

CHAPTER X.

ASSAM HIGHLANDS AND BRAHMAPUTRA BASIN.

THIS north-eastern region of India is a land of transition. Owing to its position on the frontier of several geographical domains, it also belongs ethnically to different historic epochs. The plains comprised in the province of Bengal have for centuries formed part of the Hindu world, whereas the ranges forming the water-parting between the Brahmaputra and Irrawaddi basins, that is, between India and Indo-China, are occupied by tribes which have reached diverse stages of culture. On the unexplored southern slopes of the Himalayas and of their eastern extension into the Chinese Empire, the aborigines belong, some to the Tibetan, others to the Indo-Chinese stock. Compared with most of the other provinces of India, Assam is thinly peopled, not only in the upland valleys, but even on the plains. Before they were wasted by the hill tribes and the Burmese invasions, the lowlands appear to have supported a much larger population along the banks of the Brahmaputra. The jungle still everywhere reveals the traces of buildings, of mounds which seem to have served as tumuli, of bamboo thickets and groves of fruit-trees, which have reverted to the wild state. At present the country is being repeopled by Bengali, Oraon, Santhal, and other colonists, who settle on the fertile plains and surrounding uplands, where they find employment on the tea plantations. But the neighbouring Bengali districts of Dakka, Tipperah, and Noakhali, lying on the right bank of the Brahmaputra, are still relatively six or seven times more populous than Assam.

GARRO, KHASI, AND NAGA HILLS.

The Garro Hills rise immediately to the east of the great bend formed by the Brahmaputra at its entrance on the plains of Bengal. These uplands, which gradually ascend from west to east, consist of parallel ridges separated from each other by deep valleys, still mostly under dense forest or jungle. Towards the south the first ridge is commanded by Mount Toura, whose summit, 4,550 feet high, affords one of the most extensive panoramas in India. The vast plains stretch away beyond

the horizon, while on clear days the giants of Sikkim are visible towering above Darjiling. Here and there, sparkling amid the forest vegetation, appear the waters of the Amawari (Brahmaputra), whose windings may be followed by the eye for over 100 miles. Towards the centre of these highlands rises the lofty crest on which the Hindus have conferred the name of Kailas, from that of the venerated Himalayan peak.

Watered by abundant rains, the Garro Hills are clothed with an extremely dense vegetation, noted especially for its vigorous creepers and parasitic plants. The valuable sal and other useful timbers abound in these forests, which are govern-

Fig. 101.—Mount Kailas, Garro Hills.

Scale 1 : 500,000.

6 Miles.

ment property, and which must become a fruitful source of revenue as soon as the country is opened up by good roads. Here also the State claims a monopoly of the wild elephants, which are numerous enough to yield 200 yearly for domestic use. Another large denizen of these forests is the rhinoceros, which is generally so gentle that it is often kept in herds like other tame animals.

Forming the western extremity of an orographic system stretching for over 600 miles towards the Yunnan Highlands, the Garro Hills are connected eastwards with other and more elevated ranges, known in the west as the Khasia (Khasi), in the east as the Jaintia Hills. Although the same geological formation prevails throughout all these uplands, the aspect of the two slopes presents considerable

diversity. The northern section consists everywhere of crystalline and metamorphic rocks sloping gently towards the Brahmaputra plains. But the south side is formed chiefly of chalks, sandstones, and other tertiary deposits rising abruptly above the valley, or ancient marine inlet, which is now traversed by the tributaries of the Meghna. While the Garro Hills are cut up by erosion into a number of parallel valleys, the Khasias present the general aspect of plateaux, with a mean elevation of from 4,000 to 5,000 feet, rising here and there to a height of 6,000 feet, and, according to the Schlagintweits, attaining an altitude of

Fig. 102.—Valleys of Erosion in the Khasia Valleys.

Scale 1 : 585,000.

9,400 feet in Mount Mopat, their culminating-point. But on the map prepared under the direction of Thuillier, Mount Chilling (6,500 feet) figures as the highest peak in the Khasia system. Some of the escarpments limiting the Khasia plateaux on the south are so precipitous that they can be scaled only by means of ladders, or by wooden steps attached horizontally to the surface of the rock. Where the calcareous formations rest on a sandstone basis, they are pierced by grottoes and underground galleries, whose supports have here and there given way, resulting in vast heaps of ruins, which present the appearance of colossal strongholds. These débris afford an inexhaustible supply to the lime-burners of the plains.

The work of erosion, which has here produced an endless variety of fantastic forms, is still going on, and after every rainy season fresh gorges and gullies are excavated, especially on the southern slopes. Nowhere else are the tropical downpours exceeded which fall in the Chera-ponji district among the Khasia Hills. In this part of Assam the rainy season also lasts much longer than in any other part of India. Beginning in March, it does not cease till the middle of November, so

Fig. 103.—The Banyan.

that near the rivers the plains remain for eight months under water. On these watery lowlands the air is nearly always heavy, dank, and charged with miasmatic exhalations. Even in the cold and dry season, from November to February, a dense fog rises towards midnight from the depressions, and the open country remains during the early hours wrapped in a hazy, fever-breeding atmosphere. While the rains last all land communication is interrupted, even between neighbouring villages, and to this enforced isolation must be chiefly attributed the present

minute ethnical subdivisions amongst the inhabitants, who were doubtless originally of one stock and speech. They are kept more apart by their swamps, quagmires, and inundated lands than they might be by broad marine inlets. Nevertheless, besides the natural routes, there exist here and there a few elevated causeways dating from an earlier period of civilisation, and now carefully preserved by the British administration. Except along these highways, all travelling is impossible without the aid of elephants. The forests of the lowlands and valleys are even more impenetrable than those of the Garro Hills; but the plateaux have been mostly cleared and occupied by the Khasia and Jaintia tribes, who cut down the timber and prepare the land for tillage during the short dry season.

The flora of these Khasia Hills is the richest in India, and probably in the whole of Asia, including no less than two hundred and fifty species of orchids alone. This amazing vegetable wealth is due to the extreme variety of soil within a narrow compass. Marshes and quagmires, decomposed rocks, weathered surfaces, bare or wooded slopes, all intermingle their special flora, while on the plains the banyan alone often forms a whole forest. Higher up flourishes the gigantic garjan, whose straight and stately stem throws off huge branches, overshadowing the ground for a space of 140 feet round about.

The Upper Brahmaputra Valley is now connected with those of the Surmah and Barak by means of great military routes across the Khasia Hills. But east of the Jaintia territory the highland system is completely interrupted by a profound depression, beyond which begin the Naga Hills, whose scientific exploration was undertaken in 1872 by the geologist, Godwin-Austen. These hills, which form a north-easterly continuation of the South Assam orographic system, are pierced at intervals by the broad and deep valleys of rivers flowing towards the Brahmaputra. Here traces have been detected of old glaciers, although the highest peaks scarcely exceed 3,000 feet. But southwards the range is connected with other and far more elevated chains, which form the water-parting between the Meghna and Irrawaddi basins. Here the Barel range has a mean altitude of nearly 7,000 feet, while one of its peaks, which is often snow-clad, rises to a height of 12,250 feet, thus forming the culminating-point on the Indo-Chinese frontier. The system falls gradually towards the north-east, where the Patkoi Hills afford easy access from the Upper Brahmaputra to the Upper Irrawaddi through numerous depressions ranging from 2,000 to 3,000 feet in height. Here the chief obstacles to free communication are caused not so much by the elevation of the land as by its dense forests and extensive marshes.

North of the Dihing, one of the great affluents of the Brahmaputra from the east, we approach a *terra incognita*, which is known to be very mountainous. The Dupa Búm peak rises to a height of 13,850 feet above the north bank of the Dihing, and the few travellers who have traversed this region unanimously describe it as of an extremely rugged character and of very difficult access, owing to the absence of roads, the steep slopes, and tangled vegetation. The village of Simé, the farthest point hitherto reached, lies already in the heart of mountains belonging to the East Tibetan system. In this region the various ridges forming

the eastern continuation of the Himalayas are separated from each other only by the narrow valleys of the Upper Brahmaputra waters. Simé was the scene of the murder of the two missionaries, Krick and Boury, who had ventured in 1854 to penetrate into these savage uplands.

The Brahmaputra Hydrographic System.

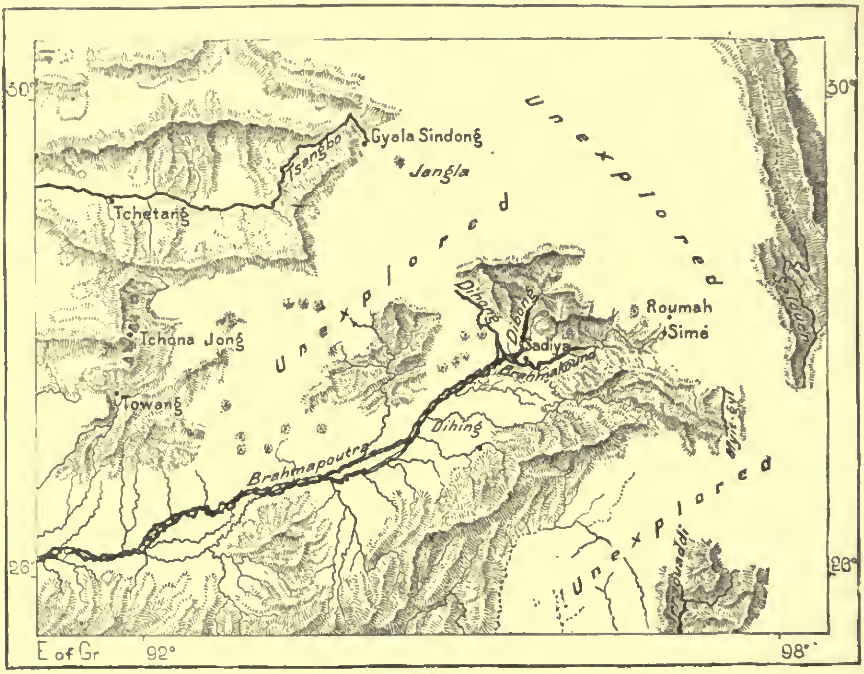
The Hindus do not regard the main branch of the Upper Brahmaputra as the most copious of all its eastern affluents. The "Son of Brahma," the Siang of the Abors, the Talu-ka of the Singpo tribes, the Haraniya of the Assamese lowlanders, the Amawari of the Garro hillmen, and the Burham-puter of the Bengali, is regarded as rising in the Brahmakund ("Brahma's Lake"), which is formed by a winding of the river Lohit round a romantic bluff. According to the Mishmis, this Lohit, or "Red River," flows from a snowy Tibetan mountain some days' journey northwards, and is said to be fordable above the Chinese village of Rumah. Compared to the other streams, whose junction with it on the Sadiya plain forms the true Brahmaputra, it has but a feeble volume. Of all these rivers the largest is the Dihong, which flows from the north-west, and whose discharge rises from 39,000 cubic feet per second, at low water, to 250,000 and even 300,000 during the great inundations. Since the time of Rennell, most English geographers regard the Dihong as identical with the Tibetan Tsangbo, which has been traced to within 90 miles of the farthest point reached on the Dihong. A few miles above the Lohit confluence the Dihong is joined by the Dibong, which by some has also been regarded as the continuation of the Tsangbo. Another claimant to the same honour is the Subansiri, which reaches the Brahmaputra far below the general converging-point at Sadiya. However, it is now certain that neither of the two last named can pretend to this distinction, the volume of both being inferior to that of the Tsangbo, where it has been gauged near Chetang, south-east of Lassa. On the other hand, both the Dihong and the Irrawaddi have a mean discharge exceeding that of the Tsangbo; consequently the discussion is now restricted to these two rivals. It was hoped that the question might have been set at rest by the blocks of wood which the Hindu explorers of the Tsangbo threw into the stream some years ago; but these numbered logs have hitherto failed to make their appearance in the lower reaches of either river.

At the Sadiya confluence the Brahmaputra is already a more copious stream than the Rhine or Rhone, even in the dry season. Where its waters are collected in one channel it is usually about three-quarters of a mile wide, while it ramifies here and there into a multitude of branches, presenting at some points a total width of from 24 to 60 miles. Its great size might seem to be sufficient proof of its identity with the Tsangbo; but a more important consideration than mere expansion from bank to bank is the volume of liquid sent down during the wet season. Now the Brahmaputra basin is certainly exposed to one of the heaviest rainfalls of any river system in the world. A portion of its valley is no doubt partly sheltered from the tropical downpours by the Garro and Khasia Hills. But these ranges

have a mean altitude of little more than 3,000 feet, so that a large portion of the moisture-charged clouds remain unintercepted till they reach the more elevated chains which form the eastern continuation of the Himalayas. No measurements have yet been taken of the rainfall in this region, but its abundance is sufficiently shown by the relief of the land, and the direction of the atmospheric currents from the Indian Ocean.

The Dihong,* which, whether connected or not with the Tsangbo, is certainly the chief affluent of the Brahmaputra, presents the rare phenomenon of bifurcation in a mountainous region. At the point where it ramifies its valley is nearly 1,200

Fig. 104.—Unexplored Regions of the Upper Brahmaputra.
Scale 1 : 1,700,000.



Hills seen in the Distance.
120 Miles.

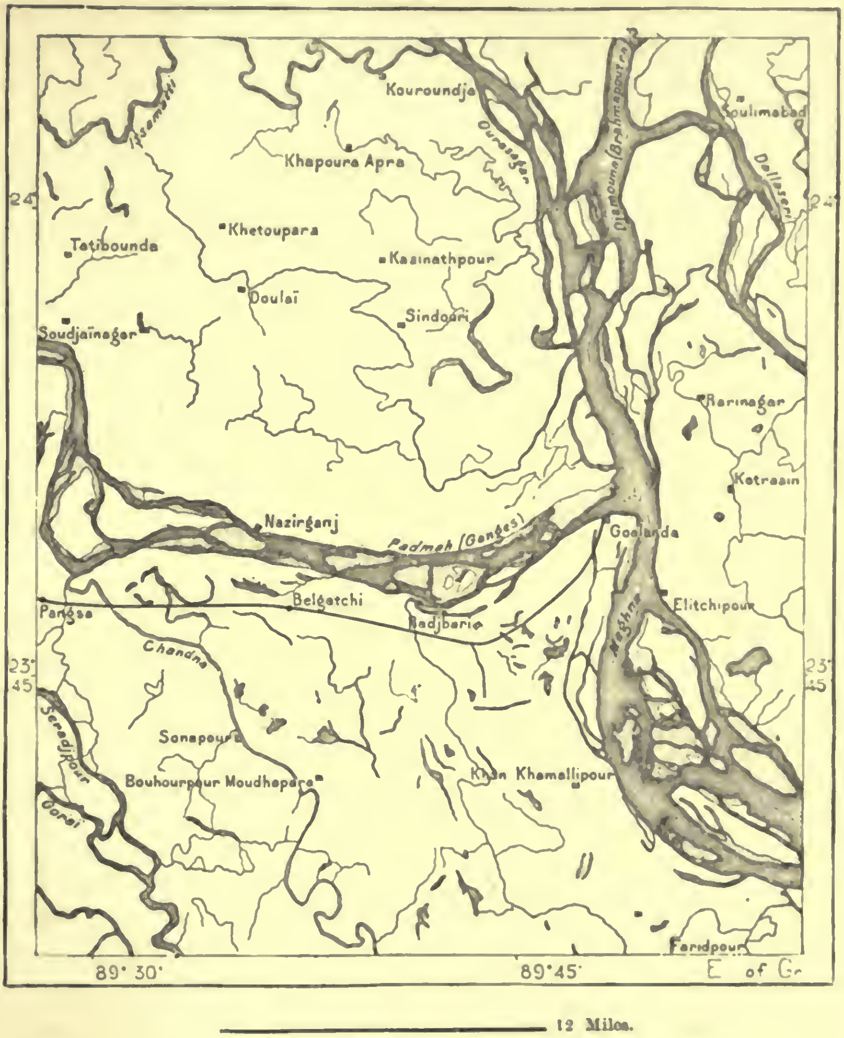
feet higher than that of the Brahmaputra. The Bori Dihing, or main stream, flows south-west to its junction with the great artery on the alluvial plain, while the Noh Dihing or "New Dihing" branch runs north-east towards the Lohit above Sadiya, so that between the two confluences there is a distance of no less than 66 miles in an air line. The other tributaries also join the Brahmaputra through several mouths, but their ramifications take place on the alluvial plains, and are shifted with every inundation. In their erratic vagaries the Dihong, Dibong, Subansiri, Manas, Tista, and other affluents resemble the main stream to

* The syllable *Di*, which forms the initial of so many of the Brahmaputra head-streams, means *river* in the Bodo (Kachâri) language.

which they flow from the Himalayas. But the most remarkable displacement was presented by the Brahmaputra itself at the end of the last century. After skirting the west foot of the Garro Hills it flowed formerly south-eastwards, and was directly joined by all the streams from the Sailhet and Cachar districts; but

Fig. 105.—Ganges and Brahmaputra Confluence.

Scale 1 : 450,000.



at present it runs, under the name of the Jamuna, due south to its junction with the Padma branch of the Ganges. The old bed is now traversed only by a small current, the two channels enclosing a space of no less than 6,000 square miles.

The Meghna, which receives most of the united waters of the Brahmaputra and Ganges, is nothing more in its upper course than the natural drainage of the South Assam swamps, mingling with the old branch of the Brahmaputra and with

the winding streams of the delta region. South of the confluence the Meghna is at once a river and an estuary, which is studded with islands and shifting sandbanks, and regularly visited by the bore. Its mean discharge has not yet been measured, but it can scarcely be less than 750,000 cubic feet per second, or three times that of the Danube. But for the habit of regarding the Ganges and Brahmaputra as two distinct streams, the Meghna, formed by their junction, would rank as the first river in Asia. Its volume exceeds even that of the Yangtze-Kiang, and is elsewhere surpassed only by those of the Amazon, Congo, and Parana. Of the two streams contributing to its formation, the Brahmaputra is certainly the largest. At Gaohati, which lies 480 miles from the coast and about 160 feet above sea level, the section of the river measured by Hermann von Schlagintweit at low water has a width of 5,000 feet, and in winter a discharge of 225,000 cubic feet per second, which during the summer inundations is increased three or four fold. The mean discharge cannot be less than 375,000 cubic feet at this point, below which its volume is still further increased by such tributaries as the Manas, Tista, and Barak. Its alluvial deposits are at least double those of the Ganges, yet the elevation of the recent formations is far less on the east side of the common delta than in the Gangetic Sanderbans. This contrast is attributed by Fergusson to the subsidence of the land in the basin of the Barak. The whole of this district would appear to have been till recently a sort of inland sea, which has been gradually filled in by the Brahmaputra deposits, which before reaching the coast were arrested by this lacustrine reservoir.

Inhabitants of Assam.—The Garros.

The inhabitants of the Assamese highlands are still for the most part in the savage state. In the east, towards the Burmese frontier, numerous rude tribes have hitherto maintained their independence, and even in the western uplands, surrounded on three sides by the plains, the British rule has only been acknowledged during the last few years. So recently as 1871 the Garros rose against the English authorities, and held out for a space of two years. But as soon as the country had been thoroughly explored by the topographic officers, the Garros were compelled to yield, and receive the fiscal agents in their villages.

The Garro tribes seem to have formerly occupied the lowlands, whence they were gradually driven into the heart of the mountains by the Bengali, towards whom they still entertain feelings of intense hatred. Nevertheless some of the outlying clans have already become more or less Hinduised, so that here a gradual ethnical transition takes place from the Brahmaputra plains to the upland forests. The Garros of pure descent are usually of middle height, active and robust, with almost black complexion, broad features, flat upturned nose, slightly oblique eyes, straight forehead, prominent cheek-bones, thick lips, and altogether a somewhat Mongoloid appearance. The scant beard is carefully plucked, so as to leave the chin perfectly smooth, but the hair of the head is never cut. Most of the natives go nearly naked, while a few wear clothes imported from the lowlands, consisting

of drawers and blankets, to which is occasionally added a sort of cloak made of bark fibre. Like most savages, both sexes are fond of ornaments, such as necklaces, earrings, bracelets, and a coronet of copper plaques, reserved exclusively for those who have slain an enemy. They bear a high reputation for courtesy, good-nature, hospitality, truthfulness, and perfect honesty, in this respect contrasting favourably with the fawning and treacherous Bengali of the plains. They are good husbandmen, although their only instrument is a simple knife, with which they dig, mow, reap, and prune the trees. The first object noticed by a stranger approaching their hamlets is the watch-house, which is built on a platform overlooking the other huts, and which commands a view of the surrounding cotton, corn, and sweet-potato plots. After two or three crops the land is allowed to lie fallow for seven or eight years, and the least pretext suffices to cause the community to shift its quarters. In this way eight or ten successive hamlets will be founded during a single generation, and in the forests traces are everywhere met of abandoned dwellings overgrown with herbage and brushwood.

The Garro language, of which several vocabularies have been collected, is related to that of the Mech tribes of the terai and others of Tibetan stock. They, however, call themselves the brothers of the English, by which they simply mean to claim political independence. In their manners and customs they resemble the numerous communities belonging to the same stage of culture in South-west China, farther India, and the Dekkan. In some respects they may even be regarded as presenting a type of primitive society, which has hitherto resisted all the outward influences surrounding it. Nowhere else have the matriarchal institutions been better maintained. The clans have preserved their *mahari*, or "maternal" name, and the wife is still regarded as the head of the family. The maiden woos the youth, who must always be chosen from a different mahari, and permission to marry him is sought, not from his father, but from his mother. Should he himself presume to make the first advances, his whole mahari is condemned to a heavy fine for such a breach of propriety. Amongst most wild tribes the nuptials are preceded by a real or feigned abduction of the bride, but amongst the Garros the reverse process takes place, the future husband being forcibly carried off and introduced to the "maternity," of which he remains henceforth a member. Nevertheless, in the case of heiresses the bridegroom is chosen and the contract prepared by the two respective maternities. The son does not inherit the paternal estate, which passes to the sister's son. But this nephew also inherits the widow, and must marry her, even though she be the mother of his own wife. Traces of this primitive custom are found also amongst other native communities in India.

Although they do not actually govern, the women are always consulted in the village gatherings. The *laskar*, or chief, while indebted for his position to the favour of the maternity which he represents, must always be a man, and resides in the large house reserved for all unmarried men according to the general Indo-Chinese custom. Some of these laskars own more than fifty slaves, all descended from a conquered race, which comprises perhaps two-thirds of the whole population, but which has become almost completely assimilated to the Garro type. Amongst

the free men there are no castes, and in most other respects these hillmen have hitherto resisted the social influences of the surrounding Hindu populations. They eat the flesh of cows, and with the exception of milk, which they detest, they reject no article of food, devouring even rats, frogs, and snakes. A choice national dish are dogs specially "fattened for the table." Their religious ceremonies, conducted by those who best remember the oral prayers, somewhat resemble those of the Hindu Siva sect. But in their shrines no images are tolerated, although the spirits are worshipped under the form of silk or cotton flocks attached to bamboos fluttering in the wind. The dead are burnt, and the ashes preserved in a sort of bamboo cage embellished with grotesque figures. Formerly the departed were commemorated by the capture of Bengali lowlanders, who were solemnly sacrificed at the funeral pyre; but since 1866 these sanguinary rites seem to have been completely suppressed.

The Khasia and Nagas.

East of the Garros and of the obscure Migam tribe are the Khasia, Koziya, or, as they call themselves, the Khyi. Having been subject to British rule for over fifty years, and having established close commercial relations with the surrounding lowlanders, the Khasia are much more civilised than the Garros, and several of their tribes have even become partly Hinduised. Before their reduction by the English they formed a confederacy of petty republics, each consisting of a certain number of villages governed by a local aristocracy. This political system has been to some extent preserved side by side with the British administration. The Khasia and their eastern neighbours, the Jaintia or Sainteng, are distinguished from all the other inhabitants of Cis-Gangetic India by their monosyllabic speech, which, however, already shows some traces of transition to the agglutinating form. Like Basque, this language is completely isolated, presenting no distinct relation to any other known tongue. In their physical appearance the Khasia and Jaintia differ but slightly from the Garros and other members of the Tibetan stock. According to Hooker, some of their tribes have preserved the practice of tattooing, and nearly all chew leaves, which have the effect of dyeing their teeth red. "Dogs and the Bengali have white teeth" is a local saying, often heard in excuse for this habit. They are honest, trustworthy, and of an extremely cheerful and animated disposition. They are constantly singing, and almost alone amongst Asiatics they whistle tunes with surprising accuracy. As amongst the Garros, matriarchal institutions still flourish, and traces of polyandry have even been preserved amongst several tribes. In case of divorce, which is very common, the husband returns to his maternal clan, and the children remain with their mother, whom they alone recognise. All the dead are burnt, but cremation being a very difficult operation during the rainy season, the bodies are preserved in honey till the fine weather. The age of dolmens still survives in the Khasia Hills, where the approaches of all the villages are encumbered with monumental stones, disposed either horizontally on piles, or vertically, as in the west of Europe. Monoliths of fantastic form are also erected along the highways in memory of great events.

The plateaux and valleys east of the Khasia and Jaintia Hills are occupied by the so-called Naga tribes. But this term Naga, possibly associated with the old Naga, or "Snakes" of Aryan tradition, is a collective name, applied somewhat vaguely to communities differing greatly in speech, habits, dress, and many other respects. Towards the north-east they merge in the Sing-po of Burma, while on the south they are connected by intermediate links with the Kuki race. One of their tribes was sprung of the dew, another hatched from an egg, a third rose from the waters, a fourth self-produced from nothing. But pre-eminent amongst them are the Angami, or "Unconquered," who have scarcely yet been completely reduced by the English. They recognise no chief, and, thrusting a spear into the earth, exclaim with savage pride, "Behold our Master!" The Nagas are far more sedentary than the Garros, occupying permanent villages, defended, like so many strongholds, by ditches, thorny palisades and *chevaux-de-frise* on the crests of the hills. The approaches to these fastnesses are scarcely wide enough to admit two men abreast, and in time of war are strewn with all manner of obstacles. Till recently the face could not be tattooed until a head was procured either by stratagem or in open combat, and presented to the betrothed. Hence head-hunting was as universally practised as amongst the Dyaks of Borneo. Nevertheless, the Nagas are endowed with some noble qualities. They respect their pledged word, devote themselves willingly for the common safety, and piously preserve the enclosures guarding the graves of their dead. They till the land skilfully, are highly esteemed as coolies on the tea plantations, which are gradually encroaching on their territory, and which must eventually absorb them far more effectually than the armed expeditions of the British authorities. The collective population of all the Naga tribes is estimated at about 70,000.

The Kuki, Bodo, Koch, and other Aborigines.

The hilly tract stretching south of the Naga domain as far as Tipperah and the Chittagong district is occupied by the Kuki tribes. This generic term, applied to them in an offensive sense by the lowlanders, is not recognised by these hillmen, who lack all national cohesion, and have no collective name for the clans and septs scattered over their forests. Most of them have a certain physical resemblance, and are easily known by their low stature, muscular and thickset frames, flat features, and almost black complexion. Some are said to be noted for their disproportionately short legs and long arms. The national costume is limited to a loincloth for both sexes, a scarf for the women, a turban for the men, and a few metal ornaments. The Luntka tribe go almost naked, as their name implies, a wicked stepmother having, according to the tradition, stripped them, to give their clothes to her own children. Every stage of savage and barbarous life is represented by the multitudinous Kuki clans, some of which are in direct relation with the Burmese, some with the Bengali Hindus, while others are still in a state of complete isolation. Some are said still to obtain fire by friction, and to season their food with bamboo ashes instead of salt; whereas others, such as the Tipperah hillmen, claim the title

of Hindus, and practise rites of Brahmanic origin. Of all the Kukis the most powerful are the Lushai, who dwell in the south of the Manipur country, amongst the mountains separating Tipperah from Burma. The British authorities have had to send repeated expeditions against these marauders, who display remarkable skill in defensive warfare, and who fight with great courage in the presence of the enemy. Nowhere else is the practice of vendetta so scrupulously observed. Vengeance must even be taken on animals and trees, so that the man-eating tiger is pursued and his blood drunk by the victim's nearest relative, while the tree falling and crushing a native is cut down and torn to pieces.

The hilly regions on the Assam frontier are inhabited by other Indo-Chinese peoples, such as the Khamti and the Singpo, or Kakyen, which, however, are found chiefly in the Irrawaddi basin. The marshy and wooded low-lying districts of Assam are also occupied by some primitive tribes, such as the Mikir, who number over 40,000 in the forest clearings between the Khasia Hills and the Brahmaputra. They are a peaceful and industrious people, residing mostly in large houses, each of which affords accommodation for several families. A still more numerous nation are the Bodo, whose tribes, with a joint population of probably more than 200,000, are scattered all over Assam, as well as throughout the Barak and Brahmaputra basins. Some are even found in Upper Bengal and the Nepalese terai, where they have for neighbours the Dhimals, who number about 15,000 in the sal forests along the foot of the west Bhutan mountains.

The Bodo, whose domain thus forms a vast semicircle round the Assam highlands, are generally known by the name of Cachari, and from them the district on the Manipur and Burma frontier probably takes the name of Cachar. The national designation is Rangtsa, or "Celestials," and the race is grouped in compact communities chiefly in the peninsular Kamrup country lying between the Brahmaputra and the Manas. In this extensive tract they have been variously modified by their commercial relations with the surrounding populations. Several of their tribes have adopted certain customs from their Hindu neighbours, and have taken the title of Soronia, or "Purified," because they abstain from the prohibited articles of diet, and practise the prescribed ablutions under the direction of the *guru*, or priests. Others, living in East Assam near the Buddhist populations, have their lamas; but all alike, whether Sivaists, Buddhists, or Pagans, have preserved their primitive usages, by which they are almost everywhere distinguished from the other races surrounding them. Their physical type differs in every respect from the Aryan, their prominent cheek-bones, flat nose, broad nostrils, small eyes, thick lips, and olive complexion suggesting a relationship rather with the Dravidians of Southern India. According to Hodgson, their speech also presents the same features as that of the people of the Dekkan, while the few words borrowed from the Sanskrit show that, before their contact with the Aryans, they had no knowledge of agriculture properly so called, and possessed neither horses, ploughs, money, nor abstract terms.

Like the Garros, the Bodo are still of somewhat nomadic habits, seldom cultivating the same plot for more than two years consecutively, or residing more

than six years in the same village. Even after returning to their fallow lands, they never build their huts on the old sites, for fear of the spirits, nor do they ever seek to become the absolute owners of the ground which they cultivate. Hence they are everywhere found in the position of tenants, paying the rent either in money, the produce of the soil, or manual labour. Notwithstanding the unhealthy climate of the marshy tracts usually occupied by them, they are more vigorous and energetic than their neighbours, from whom they are also distinguished by a higher moral standard. According to the unanimous testimony of travellers, they are at once gentle and respectful without servility, honest, truthful, industrious, of frugal habits, and always cheerful. Their women are held in great respect, being treated with remarkable deference, and consulted on all important matters. But although often regarded as of the same stock as the Garros, they have preserved no matriarchal institutions. All considering themselves as perfectly equal, they recognise neither tribal divisions, castes, nor any other social distinctions. Each member of the community takes his share in the necessary domestic and out-door work, building their own houses, tilling the land, weaving the materials for their dress, and importing from the Hindus only such articles as they are themselves unable to manufacture. Village disputes are rare, although occasions arise requiring the intervention of the council of elders. In such cases the delinquent is publicly reproved, or even banished, should his presence in the commune be regarded as a public danger. There is no hereditary priesthood, nor is any remuneration awarded to those who voluntarily assume the sacerdotal functions. These are, on the other hand, of an extremely simple nature, being restricted to invoking the "army" of the stars, forests, mountains, of all great natural objects, and especially of the rivers; for, like the Hindus, the Bodo worship the *gangas* of their country. They also resemble their Dhimal neighbours in their veneration for certain plants, and especially the *sij*, a species of euphorbia abounding with a milky sap. As amongst the aborigines of Orissa, this plant is universally cultivated in all their village plots.

The Koch or Kuch nation is still more populous than the Bodo, numbering in North-east India considerably over a million souls. They are spread over the whole tract lying between the Ganges, the Himalayas, and Burmese frontier hills; but they are chiefly centred in the semi-independent state of Koch-Behar in Bengal. The Pani-Koch, who dwell at the foot of the Garro Hills, resemble these highlanders in many respects, have the same matriarchal usages, and are probably of the same stock. But all the other branches of the race are distinguished from the various peoples of Northern India by their marked prognathism, curly beard, thick lips, and almost black complexion. They are usually grouped with the Dravidians, although some anthropologists affiliate them to the Negritoes of the Eastern Archipelago. Those who do not speak dialects of Hindu origin have a form of speech resembling that of the Mech. But their mixture with the Hindus and various Assamese peoples has produced such a variety of types, that it is no longer possible to determine their true affinities with any certainty. The wealthier members of the race would regard themselves as insulted by being called Koch;

they pretend to be descended from Siva, and claim the ambitious title of Rajbansi, or "Sons of Kings."

The Assamese Lowlanders.

The civilised lowlanders of Assam, who have become largely intermingled with the nomadic Dhimals and Bodo, as well as with the Koch and Mech immigrants from the west, belong to a large extent to the Indo-Chinese ethnical group. The north Brahmaputra basin affords such easy access over low passes to the Irrawaddi Valley, that invaders from the east have frequently been able to penetrate into Assam, where they have become intermingled with the aborigines. The Chutiya, who were the dominant people of East Assam at the beginning of the fourteenth century, were probably of Siamese origin, although the dialect of one of their tribes in Upper Assam seems rather to be related to the language of the Bodo. Now almost completely Hinduised, they are distinguished from other Hindu races by their round face and flat features. The Ahoms, who succeeded the Chutiya as masters of Assam, were originally of Shan stock; but since their immigration in the thirteenth century, they have been profoundly modified by mixture with the native and Hindu women. Under their rule the inhabitants of Assam were subject to great oppression; but since the loss of their political supremacy, they have been gradually fused with the Hindu castes except on the Upper Brahmaputra, where they are still grouped to the number of 130,000 round their old capitals. Assam was also subject during the first quarter of the nineteenth century to the Burmese, whose sway, however, was of too short duration to leave any permanent settlements in the country.

While the Indo-Chinese penetrated from the east over the border hills, the Aryan Hindus of a more or less pure type, advancing by the broad valley of the Brahmaputra, gradually subdued or absorbed most of the native Assamese lowland tribes. The oldest traditions of the country speak of the Hindus as already settled in the kingdom of Kamrup, between the Manas and Brahmaputra. Their empire was overthrown by the Mohammedans in the fifteenth century, when the indigenous Koch element for a time resumed the ascendency, without, however, effacing the Aryan culture. Many of the aboriginal tribes even became grouped amongst the Hindu castes, and a Bengali (Neo-Sanskritic) dialect ultimately prevailed throughout the lowlands. In Assam the pure-blood Brahmans are not numerous, and the most important Hindu group are the Kalita, who have been settled from the remotest times in the country. With their fine oval features, prominent nose, large eyes often of an iron-grey colour, and pliant members, they bear a striking resemblance to the Rajputs, and although regarded as of the Sudra caste, they themselves claim a higher origin. In several districts the best cultivated lands belong to the Kalita, whom the Brahmans sufficiently respect to accept the water of purification from them. Another widespread Hindu caste are the Dom, who enjoy under the British rule a monopoly of the Upper Brahmaputra fisheries.

The population of Assam is almost exclusively rural, and comparatively far less dense than elsewhere in India. Hence the arable lands, which yield rice and fruits

in superabundance, still remain to a large extent unreclaimed. Besides rice, cotton and jute are extensively grown for the Calcutta market, and in recent years large tea plantations have been established, especially in Cachar and on the southern slopes of the sub-Himalayas in Upper Assam. Owing to the scarcity of hands in the country, large numbers of coolies are engaged on these plantations from the Santal district and Orissa. The mortality is excessive amongst these immigrants, who are attracted by high wages, but who have to work in a marshy land and a stifling atmosphere, far from their native homes. Of 1,200 coolies imported by a planter from Madras, all but three had perished in four years. Nevertheless the victims are constantly replaced by fresh arrivals. As many as 34,000 were introduced in 1876 alone, and at present there are about 200,000 altogether at work on the plantations. The frequent attempts to open a trade route between Upper Assam

Fig. 106.—Inhabitants of Assam.
Scale 1 : 8,000,000.

120 Miles.

and the Yangtze-Kiang basin have been stimulated by the planters, in the hope of lowering the labour market by the introduction of Chinese immigrants from the western provinces. Assam has been parcelled out into vast landed estates like those of Ireland and the Scotch highlands, and in the whole district there are only eighteen domains paying an impost which scarcely amounts to one-fiftieth of their gross revenue.

Most botanists regard Assam as the native home of the tea plant. Above the Brahmaputra Valley it is found everywhere growing wild to a height of from fifteen to twenty feet, and in the Naga hills it attains a height of nearly seventy feet. It was first discovered in this region by Robert Bruce in 1823; but twelve years passed before the first "garden" was established near Lakhinpur, on the alluvial plain of the Subansiri. The Government, to which this estate belonged,

introduced Chinese cultivators from Fokien, and in 1838 twelve chests had already been consigned to the London dealers. A few years afterwards private enterprise obtained vast concessions for the cultivation of the precious shrub, and then began the era of reckless speculation. Nevertheless the ruin of a large number of planters failed to check the production, which continued to increase from year to year, and the exportation from Assam alone is now equal to one-sixth of that of China to the whole world.* The plantations have a present area of over 150,000 acres, and the concessions already made for their future extension cover altogether about 450,000 acres. Of the three varieties—Chinese, native, and hybrid—the planters prefer the last, which is more vigorous and leafy than the Chinese, and grows to a larger size than the native.

Topography.

Assam, still a commercial *cul-de-sac*, with no outlet except towards Calcutta, is destitute of large towns. *Sadiya*, which occupies an admirable position at the confluence of the three great Brahmaputra affluents—the Dihong, Dibong, and Lohit—and which was formerly the capital of the Ahom conquerors, is merely an open market for the surrounding hill tribes. Until the routes to China and Tibet are opened up through the Abor, Mishmi, and Khamti territories, Sadiya will be unable to benefit by its unrivalled commercial site. At present it is exceeded in importance both by *Dibrugarh*, at the head of the steam navigation during the floods, and by *Sibsagar*, which lies on an alluvial plain some 10 miles south of the Brahmaputra. Sibsagar, now the chief town of a district, has succeeded to the populous cities which were formerly capitals of the Ahom kingdom. Such were *Garhgaon*, towards the south-east, whose ruins are now overgrown with brushwood, and *Rangpur*, on the south, whose remains cover a space of over 20 square miles. In the very heart of the forest stand the mouldering ruins of the Sivaite temples of *Dinajpur*, with their carved stones symbolising the creative power of nature. These crumbling remains of palaces, forts, and shrines attest the wealth and culture of the ancient Assamese, and contrast strangely with the scattered groups of hovels now passing for towns. Few countries in India have been subject to greater devastations than the watery plains of the Brahmaputra.

Tezpur, like Dibrugarh, is an important market-place; but the busiest town in the Upper Brahmaputra region is *Gaohati*, on the left bank of the river. The site of this ancient capital of the Hindu kingdom of Kamrup is everywhere strewn with ruins, now overgrown with brushwood or aquatic plants. At Gaohati we enter the region of great pilgrimages. An eminence rising 650 feet above the stream immediately west of the town is crowned by a much-frequented temple, to the service of which were formerly attached five thousand young girls, and which even still contains several hundred. A shrine on a rocky islet in the middle of the river is also visited by thousands of devotees, and on the right bank of the Brahmaputra stands the temple of Haju, consecrated to Buddha, or Maha Muni, which attracts both the Buddhists of Bhutan and the various Brahmanical sectaries.

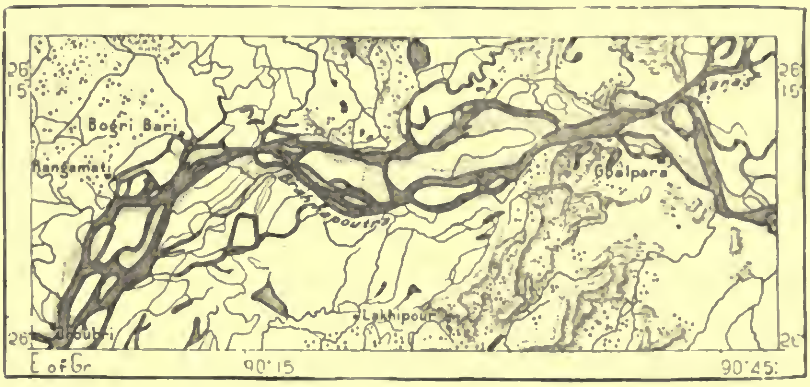
* Tea exported from Assam in 1851, 256,000 lbs.; 1871, 12,800,000 lbs.; 1881, 43,000,000.

RUINS OF AN AHOM TEMPLE AT DINAJPUR, UPPER ASSAM.

This sanctuary, in which the two great religions of India thus meet on common ground, marks the site of the city of *Azu*, which contained the tombs of the Assam kings, with their gold and silver idols and the remains of their numerous wives, officials, and animals of all sorts sacrificed on their graves. Till recently Gaohati was the capital of Assam, but the insalubrity of its climate compelled the English authorities to withdraw to the plateau of *Shillong*, in the Khasia Hills. Here the new capital and health resort was founded in 1874, and was soon connected with Gaohati by a splendid highway 64 miles long. Military cantonments have been established in the neighbourhood, and native Garro, Khasia, and Jaintia colonies have sprung up under their shelter. Shillong, which lies at an elevation of nearly 5,000 feet on the water-parting between the Brahmaputra and Bakar basins, enjoys the administrative advantage of occupying a central position in the province of

Fig. 107.—The Brahmaputra between Goalpara and Dhubri.

Scale 1 : 240,000.



12 Miles.

which it is the chief town. West of it Mount Tura is crowned by another sanatorium.

Goalpara and *Dhubri*, following in succession along the Brahmaputra below Gaohati, are chiefly important as entrepôts of lumber and agricultural produce. A railway, which is soon to be continued to Upper Assam, already connects Dhubri with the Ganges Valley. Beyond the Assam frontier the plains watered by the Dharla are mostly included in the native state of *Koch-Behar*, whose capital of like name is a mere cluster of huts grouped round the raja's brick palace. A larger place is *Rangpur*, which lies farther south within the Bengal frontier, where are also situated *Dinajpur* and *Bogra* in the triangular space formed by the Ganges and Brahmaputra above their confluence. In this region the most important mart is *Sirajganj*, the chief port of the Jamuna branch of the Brahmaputra. Although scarcely a century old, this place has already had to be rebuilt 5 miles from its original site, after having been swept away during the floods. Its export trade in jute, tobacco, oleaginous seeds, salt, and rice, is chiefly in the hands of the Rajputana Jaina merchants, here known by the name of Marwari.

Goalanda, another riverain port at the Ganges and Brahmaputra confluence, stands on such treacherous ground that it has to shift its position with the seasons. In winter and spring a temporary railway is continued for nearly 2 miles beyond the permanent terminus; in summer the rails are removed, and the locomotive yields for a time to the rising waters. This place is visited by over fifty thousand boats, exclusive of fishing-smacks, and large curing stations have been established along the shore.

The Meghna basin, which receives the drainage of the Manipur Hills and the ranges stretching from the Garro to the Patkoi Mountains, has no market-town comparable to Sirajganj or Goalanda. *Silchar*, a military station near the Burmese frontier, holds a much-frequented annual fair, and *Sailhet*, on the Surma, is an industrious trading-place, the most populous in the province of Assam. Unfortunately its climate is so unhealthy that the European residents are frequently compelled to seek a purer atmosphere at *Chera Ponji* and amid the pine forests surrounding Shillong.

Several important towns are scattered along the shifting channels of the low-lying region comprised between the Meghna and Jamuna. Here *Jamalpur* stands on the now almost abandoned old course of the Brahmaputra. *Maimensinh*, or *Nasirabad*, is the chief town of a district which yields the best jute in Bengal. *Kisoriganj* attracts to its fairs thousands of Marwari, Bengali, and Burmese dealers. But trade and population have been diverted chiefly to the southern region about the junction of the streams. A little north of the Meghna and Padma (Ganges and Brahmaputra) confluence formerly stood *Bikrampur*, capital of a Hindu state, and here is still shown the spot where its last sovereign and his wives threw themselves into the flames at the approach of the Mohammedans. Here are also still maintained several schools devoted to the study of Sanskrit and the old writers. The neighbouring town of *Firinghi Bazaar* ("Market of the Franks") recalls the first establishment of the Portuguese in the district, dating from the year 1663. *Sonargaon*, which succeeded Bikrampur, is now a mere collection of cabins buried amidst the surrounding palms. But *Dakka*, which became a royal residence in the seventeenth century, is still a large place, with a population of 200,000 in 1880. At one time it stretched about 18 miles north and south, and the ruins of its palaces are still scattered over the surrounding jungle. In the eighteenth century it was replaced as capital of Bengal by Murshidabad, but it still preserved its local industries. Here the English, French, and Dutch had factories for the purchase of its silks embroidered in gold and in silver, and especially its fine muslins. The introduction of the Manchester cottons has ruined these manufactures, but Dakka has acquired great importance as a market for agricultural produce. Its two ports of *Naraingan j* and *Madanganj*, lying on a deep affluent of the Meghna, 8 miles farther south, have a vast export trade, and the exchanges amounted in 1877 to nearly £1,200,000. Amongst the inhabitants of Dakka are some Armenians, Greeks, Portuguese, and other "Feringhi" of more or less pure blood, descended from traders who settled here during the last century.

Near Sonargaon, a city of *Bengalla* is said to have formerly existed, whence the province of Bengal is supposed to have taken its name.

East of the Meghna the two largest places in Tipperah are *Brahmanbaria* and *Kumillah*, which enjoy a considerable local trade. *Noakhali*, or *Sudharam*, a district capital, lies now nearly 10 miles from the sea, although originally founded on the coast near the mouths of the Meghna, whose deposits are constantly encroaching on the Bay of Bengal. Kumillah is one of the future stations of the projected railway from Calcutta to Burma. *Agartalla*, capital of the reduced Tipperah tribes, is a mere hamlet grouped round a military station.

NOTE.—The native explorer, who returned early in 1883 to Calcutta after some years' absence in Tibet, has at last practically settled the Brahmaputra-Irrawaddi controversy. This traveller got as far north as Saitu in 40° N. 92° E., whence he returned to Batang and endeavoured to reach Assam by the direct route; but at Sama, which seems to be Wilcox's Simé, where the missionaries Krick and Boury were murdered in 1854, he changed his mind, and, in order to avoid falling into the hands of the Mishmi savages, took the circuitous Lassa route *viâ* Alanto and Gjamda. At the latter place he turned down to Chetang on the Tsangbo, whence he made his way through Giangze Long and Phari to Darjiling. Now it is evident that if the Tsangbo flows to the Irrawaddi, he must have crossed it between Batang and Sama, between Sama and Gjamda, and again at Chetang; but he is positive that he crossed it once only, that is at Chetang; and he adds, that on the road between Sama and Gjamda there is a great mountain range to the west, separating the affluents of the Tsangbo from those flowing east. One of these may possibly reach the Irrawaddi, but the Tsangbo itself could do so only by flowing over a lofty range. It is therefore clear that the Tsangbo flows, not to the Irrawaddi, but to the Brahmaputra, there being no other alternative.—EDITOR.

CHAPTER XI.

SUBARNAREKHA, BAITARANI, BRAHMANI, AND MAHA NADDI BASINS.

ORISSA, CHATISGARH, CHOTA-NAGPORE NATIVE STATES.

ALTHOUGH of small extent and sparse population in comparison with the vast Gangetic basin, this section of the peninsula constitutes a distinct natural region, both in its history, its hydrography, and other natural phenomena. At the same time the jungle and forest-clad uplands of the interior nowhere present any well-defined limits, while the wild tribes occupying them stretch northwards into Bengal, west and south into the Narbadah, Tapti, and Godaveri basins.

The highlands of Central India, some of which are covered with lavas, form a vast cirque round the plains where the Maha Naddi receives the waters of the Seo, Hasdu, and other large tributaries. The Maikal Hills, which form the highest border range of this amphitheatre, have a mean elevation of 2,000 feet. The orographic system, which is cut up into numerous sections by the running waters, and which enclose many dried-up lacustrine basins, is continued north-eastwards from the Maikals, and here and there attains a height of over 3,000 feet, the Perta peak, on the Chota-Nagpore frontier, rising to 3,650 feet. Towards the middle of its course the Maha Naddi, here already navigable, impinges on an old rocky barrier, which stretches south-west and north-east parallel with the Orissa coast. Below the first defiles and rapids the stream is deflected southwards through a fissure in the hills, which is continued south-westwards by the valley of the Tel, a tributary of the Maha Naddi. Beyond this point the main stream again trends eastwards, and pierces the Eastern Ghats through the Barmul Pass, which winds for nearly 40 miles through rugged gorges and wooded slopes. On the north the chains are broken into short segments by the Brahmani, the Baitarani, and their confluents. Here are the Talchir Hills, which contain rich coal-fields, differing little from those of Australia. The culminating-point of this region is the Maghasani, or "Seat of the Clouds," which has an altitude of 3,870 feet, and south of which a small range known as the Nilghiri, or "Blue Mountains," rises abruptly above the alluvial plains of Orissa.

The Subarnarekha, or, "Golden Ribbon," which rises on the Chota-Nagpore

uplands, forms an independent river basin, whereas the Baitarani, Brahmani, and Maha Naddi unite in a common delta beyond the hills. Of these three rivers the Baitarani is the smallest, although its alluvial deposits stretch farthest seawards to the dreaded Palmyras headland. Its delta is further increased by contributions from the Brahmani and various channels of the Lower Maha Naddi, while towards the south the chief branches of the Maha Naddi are also continually enlarging the area of the mainland. All these alluvial encroachments on the sea beyond the

Fig. 108.—Lake Shilka.

Scale 1 : 660,000.

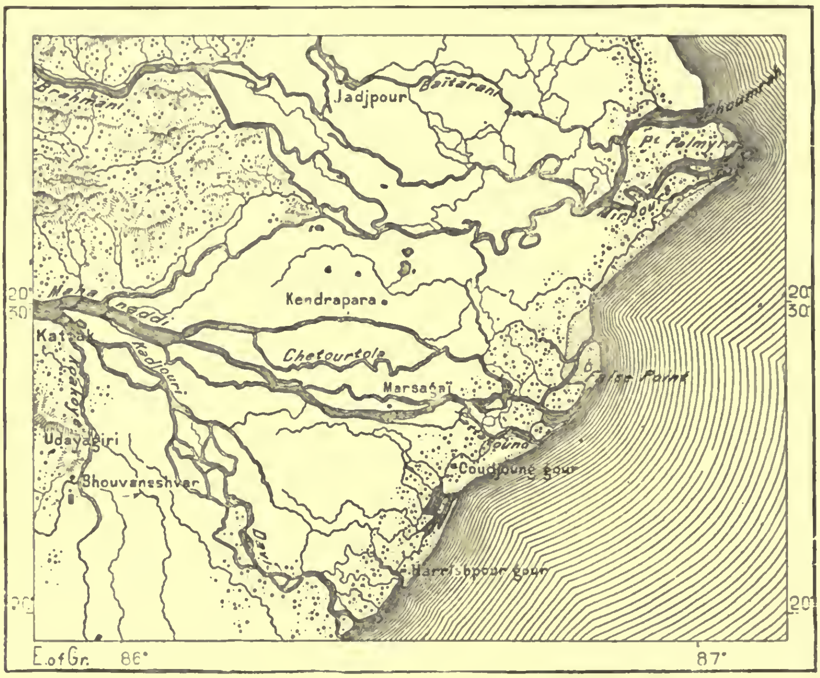
0 to 100 Feet. 100 Feet and upwards.

12 Miles.

ancient rock-bound coast-line extend for a distance of nearly 200 miles along the Orissa seaboard, and the new lands thus developed have a total area of no less than 5,000 square miles. Yet much of the sedimentary matter washed down from the central plateaux has been carried beyond the new coast-line, forming submarine deltas at the river mouths and sandbanks along the shore. A large quantity of the Maha Naddi and other fluvial alluvia is carried away by the tides, which here rise from 10 to 15 feet, and which by their normal north-westerly direction deflect all the river mouths northwards.

But although the land thus tends constantly to increase, the whole space comprised within the natural limits of the new encroachments has not yet been completely filled in. Of the lakes, or lagoons, which thus still survive, as the remains of old bays and inlets, the largest is Lake Shilka, which lies south of the delta, and whose area increases from 360 square miles in the dry to 480 in the wet season. But it is scarcely more than six feet deep, and is everywhere studded with islets and sandbanks. At low water it is quite salt, but during the prevalence of the rains becomes a fresh-water reservoir. The alluvial strip enclosing it seawards is becoming constantly broader and firmer, having increased from little over half a mile to nearly two miles during the last eighty years, while the deep and spacious

Fig. 109.—Maha Naddi Delta
Scale 1 : 1,350,000.



24 Miles.

marine channel with which it communicated a hundred years ago with the sea has been replaced since 1825 by an artificial canal often obstructed by the sands. Hence under ordinary circumstances its level is scarcely affected by the tides. But when the ebb is arrested by the monsoon during the rainy season, the surrounding cultivated lands are flooded, and the crops frequently destroyed. The salt collected on the Parakud sands near the emissary is reserved for the service of the temples, and the lake is navigated by a few flat-bottomed craft, which carry the pilgrims from the Circars to the famous shrine of Jagganath.

The geological work accomplished by the Maha Naddi probably exceeds that of any other river in the world, regard being had to the extent of its drainage and its

mean discharge. Although 520 miles long, with a basin exceeding 43,000 square miles, or rather more than one-third of the British Islands, the "Great River," as its name implies, is in its normal state a very modest water-course compared with the Ganges, Yangtze-Kiang, and the other great Asiatic streams. During the greater part of the year it is a mere rivulet, sluggishly creeping through a disproportionately wide channel, and at times reduced to a volume of no more than 775 cubic feet per second. But during the great summer floods the Maha Naddi fully vindicates its title, rivalling the Rhone, the Nile, or even the Mississippi in magnitude. Where it emerges from the Eastern Ghats it now rises 65 feet above its winter level, and occasionally sends down a liquid mass of over 1,250,000 cubic feet per second, or one-third more than the Mississippi at high water. At this period the Brahmani and Baitarani also discharge 282,000 and 140,000 cubic feet per second into the common delta raising the total volume at this point to nearly double that of the Mississippi.

During the rainy season the inhabitants of Orissa are exposed not only to these tremendous fluvial inundations, but also to those of the sea driven inland by the cyclones, deluging the paddy-fields and often leaving behind them extensive saline incrustations. At other times the land suffers from long droughts, when the Maha Naddi is reduced to an insignificant channel, while the other rivers are completely dried up. The natives of the delta are thus constantly subject to the risk of two opposite evils. Should the annual rainfall prove deficient, the crops are burnt up before arriving at maturity; should the monsoon prevail too long, the fields are wasted by marine floods. In the more exposed districts the natives keep boats moored to their dwellings, in order to be always prepared for such sudden emergencies. Yet at times all escape is cut off, and then the foaming waters are strewn with countless bodies, which attract the hungry vulture from the four quarters of the heavens. After the subsidence the helpless survivors find their harvest ruined, their live stock swept away, and they thus become a prey to famine and fever. Fully one-fourth of the whole population perished from these causes in 1866, when 690,000 acres of rich lands were flooded, and the villages of over 1,200,000 natives completely submerged.

Every resource of modern science has been applied by the English administration to prevent, or at least diminish, the ruinous consequences of these disasters. The first embankments erected for this purpose proved, however, more dangerous than useful, by raising the level of the streams above the surrounding plains. Then three dykes with sluices were constructed at the head of the delta, in order to retain a portion of the overflow as a reservoir for times of drought. An upper canal skirts the north-east foot of the hills, as far as the Brahmani, and will ultimately be continued to the Midnapur Canal, thereby opening up a navigable artery between Cattak and Calcutta. Taking advantage of the mean incline of the delta, which is about two feet to the mile, the engineers have cut many other canals, which now radiate in every direction, and bring about 800,000 acres under a regular system of irrigation. But the habits of the native peasantry are slow to change, and these canals are to a large extent still used only for the purpose of regulating the overflow during the inundations.

Inhabitants of Orissa.—The Kolarians.

Although the majority of populations in the basins of the Maha Naddi and other rivers of Orissa is of Hindu descent, the uplands of the interior are still occupied by aboriginal tribes. The Kols of South Chota-Nagpore, of Chatisgarh, and the Orissa highlands are even regarded as representing a formerly widespread autochthonous element, and this term Kolarian has been applied to a large group of languages fundamentally distinct both from the Aryan and Dravidian linguistic families. Judging from their physical aspect and the nature of their dialects, isolated Kolarian communities seem to have held their ground in many places in the midst of the conquering races. Such communities are met in the Himalayas, in the Assam highlands, in farther India, but they are found in most compact masses in the Maha Naddi basin. Here also they present the greatest number of tribal divisions representing every stage of civilisation.

The hilly district between the Upper Brahmani and Baitarani is occupied by the Juangs, or Pattwas, called also Jangali, or "jungle people," who number 3,000 altogether, and are probably the rudest of all the Kolarian tribes. They claim themselves to be "the first of men," and still show the place about the sources of the Baitarani where their forefathers were born. They are still ignorant of the potter's and weaver's arts, of which most savage tribes have some knowledge. Their arms are the bow and arrow, and especially the sling, while most of the stone implements found in the district show that till quite recently they were still in the neolithic age. Owing to their low stature, averaging little over 5 feet in the men and under 5 feet in the women, some anthropologists have affiliated them with the Negritoes of the Andaman Islands. But this affinity is unhesitatingly rejected by the geologist Ball, who resided fifteen years in Chota-Nagpore, and paid two visits to the Andamans.* The Juangs, who call themselves "Hindus," now wear clothes, but so recently as 1866 their women had no other dress beyond a tuft of foliage fastened with a string round the hips, necklaces, and a few other ornaments.

Far more numerous than the Juangs are the Kharrias and Birhors of Singbhúm, some of whom have already been assimilated to the Hindus of the lowlands, while others still roam the forests like wild beasts, living on roots, berries, and animals of all sorts. Till recently they still devoured their old people, and although some, questioned on the subject by Dalton, denied the charge, they did so with so much hesitation, that he remained convinced of its truth.† No less savage are other Kolarians, such as the Korwahs or Kaurs, who dwell on the water-parting between the Son, Maha Naddi, and Brahmani basins, and whom the local legend derives from scarecrows animated by a prowling demon. Their neighbours, the Bhuyia, are the "Sons of the Wind," like the Ape-god Hanuman, and all these forests and hill tribes are mentioned in the old Hindu legends under the name of Saura or Savara.

The Kolarians at present occupying South Chota-Nagpore are traditionally descended from a people who formerly resided in Behar, a region of the Gangetic

* "Jungle Life in India."

† "Ethnology of Bengal."

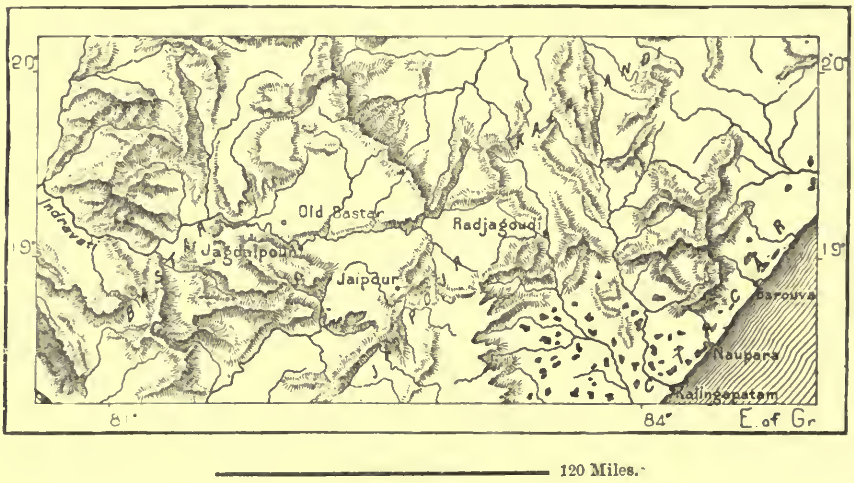
basin at one time known by the name of Kolaria. When Sakya Muni was preaching his new doctrine, the natives of Gaya were probably of Kol stock, for the old carvings on the temples reproduce their type, and not that of the Aryans. Driven from the Ganges Valley, they took refuge in the southern valleys and on the plateaux forming an eastern extension of the Vindhyas. Most of them are doubtless now merged with the Hindu populations, and grouped no longer in tribes, but in castes with the Sudras of mixed origin. But those who have preserved the national speech, usages, and traditions, and who keep aloof from the Hindus, still number about a million. Of these the most important are the Munda or Mundari, who comprise the Agariah, or nomad blacksmiths of the country, and who are estimated at over 400,000; the Bhumij, or Muri, 300,000; and the Ho, or Larka, 150,000.

All the Kolarian peoples are fully conscious of their long residence in their present homes, and regard the surrounding Hindus as intruders. According to their legends, they are Nagbhansi; that is, "snake-born," the true owners of the soil and of the hills. Till recently the natives of the Sambalpur district yearly offered a goat to an enormous fetish serpent, who they believed was coeval with the world, and would perish with it. The very name of Bhumij means "Sons of the Soil," and the Ho are "Men," in a pre-eminent sense. In any case these last may be taken as typical representatives of the Kol family, and the district occupied by them in Singbhúm has been specially designated Kolehan or Kohlan. They are generally taller and stronger than the other members of the race, and notwithstanding their broad flat features, they have a very pleasant expression. The women alone are tattooed, but only on the forehead and temples by simple parallel lines, whose size and disposition indicate the clan or tribe to which they belong. According to locality and diet the complexion varies from a reddish to a black tint. They rarely mingle with other races, but they are so far exogamous that marriages cannot be contracted within the individual clan itself, but only in some other group of the same tribe. They are organised in little republics, which send the taxes regularly to the local commissioner, without permitting the collectors ever to penetrate into their forests. The only strangers tolerated in their communities are the weavers, potters, and other craftsmen of Aryan race descended from former captives. They are good husbandmen and workers in iron, but practise no other art. As amongst the Santals, Oraons, American aborigines, and so many other primitive peoples, the *totem* system prevails in all the Kolarian tribes, each of which has its own symbolic animal. They venerate the ancestral shades; propitiate the tiger and other wild beasts by offerings; worship the sun, "father of men," the rivers, mountains, and all the forces of nature. Every hamlet has its sacred grove, a relic of the old primeval forest, where the gods still dwell, and which must not therefore be desecrated by the axe. Animals are at times offered to the sun, in whose honour no altar can be erected by human hands. In the absence of any matriarchal institutions, the Kolarians present a striking contrast to the Garros and other Assamese wild tribes. Amongst them the inheritance passes directly from the father to his sons in even shares, and to the exclusion of the daughters, who

are to them as so much cattle. Yet marriages, which are contracted at a more advanced age than elsewhere in India, are generally happy, which is due to the fact that the wife becomes the equal of the husband, who consults her in all important matters. The funeral rites resemble those of the Khasia hillmen: with the body are burnt whatever objects the departed was attached to in life, and over the graves are placed dolmens, so that many Kol villages may be recognised from a distance by their monoliths. But, like the Santals, the Kharria commit the ashes of the dead to the stream.

In general intelligent and anxious to please, the Kols have accepted the doctrines of the English missionaries more readily than perhaps any other native race. Hostility to the Hindus has also in many places aided the efforts of the Protestant preachers, who have already formed numerous flourishing Christian communities in the Kol districts. English influence has also made itself felt at

Fig. 110.—Territory of the Khonds.
Scale 1 : 4,500,000.



least indirectly amongst the Khonds or Khands, who are scattered over the Eastern Ghats, and especially south of the Maha Naddi, in Kalahandi, Bastar, and some of the northern districts of the Madras presidency. Although they have preserved the national religion, these Khonds have abandoned the horrible practice of human sacrifices, and even infanticide, formerly so common amongst them, is now regarded as a crime.

The Khonds, who are very numerous, are of Dravidian speech, but are ethnically a very mixed people. Unlike their Kolarian neighbours, they take no pains to preserve the purity of their blood, and readily form alliances with the thousands of low-caste Hindus settled in their midst. The prevalence of female infanticide also obliged them formerly to seek for wives in all quarters, amongst their Kol neighbours, the Hindus of the plains, or the Gonds of the Central Provinces. They are, on the other hand, tenaciously attached to the land, which belongs to

them "from the beginning," and they have hitherto successfully resisted the attempts of the zemindars to annex this territory to their domains. In order the better to maintain the tribal privileges, the Khonds have organised themselves in confederacies, which meet from time to time in national gatherings under the *abbayé*, or chiefs, towards whom they show great respect.

It was through the same love of their natal soil that the Khond tribes offered human sacrifices to Tari, Goddess of the Earth. By means of the half-caste itinerant dealers, they procured from the surrounding districts children destined to become "meriah," and in times of distress the Khonds themselves would sell their offspring for these sanguinary rites. The meriah, or *toki*, as they were called in the Khond language, were often supposed to consent to their own immolation, and the sacrificial priest would often reason with them on the subject. "We have purchased you," he would say; "we are blameless of your death." Then he invoked the goddess, asking her to fill the granaries, to make the cattle, swine, and poultry thrive, to drive away the tigers and venomous snakes; after which he struck the victim, who was then torn to pieces by the multitude, or else burnt to death at a slow fire, so that his copious tears might produce abundant rains during the year. Each head of a family received a piece of the consecrated flesh, with which he smeared the floor of his barn and afterwards buried it in his garden, or fixed it to a stake planted in the neighbouring stream. The ashes of bones and entrails were scattered over the fields, or mingled with the seed corn. A single sacrifice made by order of the raja of Bastar comprised twenty-eight victims, and a regular postal service was organised, so that all the neighbouring tribes might have a share of the flesh and ashes.

When these frightful practices were discovered in 1833 by Macpherson and other British officers, public opinion in England demanded their suppression, and military expeditions were even made to punish the refractory. In the years 1859 and 1860 nearly 550 meriah were thus rescued; yet the Khonds ultimately yielded only on condition of being allowed to make the British authorities responsible for the cessation of the sacrifices. The permission was officially granted; an abundant harvest fortunately ensued; the Goddess Tari was evidently satisfied with the arrangement, and all were pleased. Since 1860 no human sacrifices seem to have been made in the country, and the Khonds are already beginning to wonder that they could have ever believed in the necessity of such horrors. Nevertheless the snake is but scotched, and might revive at any moment. During the rising which took place in the summer of 1882, the Khonds of Kalahandi combined together and massacred hundreds of the Hindu peasantry of the Kulta caste, who had gradually encroached on their territory; and they are said to have summoned the kindred tribes to the holy war by sending to each clan a piece of the victims' flesh.

The Hindu inhabitants of the delta region and of all the valleys skirting the amphitheatre of hills are connected by imperceptible transitions with the Bengali, and speak the Uriya, a language of Sanskritic origin, which is also current in Southern Bengal and in the conterminous districts of Madras and the Central

Provinces. The Hindus who speak this idiom belong to all the castes, some of which, such as the Pan, or petty traders, and the Telinga, or fishers of Lake Shilka, are evidently of mixed Dravido-Kolarian stock. In many respects Orissa forms a sort of border-land between the Aryan and Dravidian worlds, and to this circumstance it is probably indebted for the special sanctity in which it is held by both races, who here often struggled for the supremacy, and raised monuments in memory of their conflicts. Noteworthy amongst the Hindu castes of this region are the Chamar and Chatisgarh, who by their resolute action rose from the opprobrium by which they had been crushed for ages. Rallying round a prophet, who proclaimed the abolition of caste and the equality of all men, they refused to recognise any superiors amongst the other Hindus, and they gained their point. By their determination they secured to themselves an honoured place in society, and now form one of the most respected and industrious sections of the community. They number altogether nearly 300,000.

Topography.

Being still mostly occupied by wild tribes, and unconnected by rail with the great centres of population, the upper basins of the Subarnarekha, Baitarani, Brahmani, and Maha Naddi contain no towns of any magnitude. Yet the numerous ruins and heaps of scoriæ near the gold and copper mines show that the country was formerly in the possession of a civilised people. The *Ramgarh*, or "Castle of Rama," a prismatic sandstone mass, resembling a gigantic fortress, near the sources of the Subarnarekha, bears, at an elevation of 2,600 feet, the remains of a city, whose double enclosure presents some remarkable features of a mixed Hindu and Arab style. The natural grottoes of this mountain are also covered with carvings and inscriptions. *Chaibasa*, capital of the Singbhúm district, is a small place on a head-stream of the Baitarani; but its market is much frequented by the surrounding wild tribes.

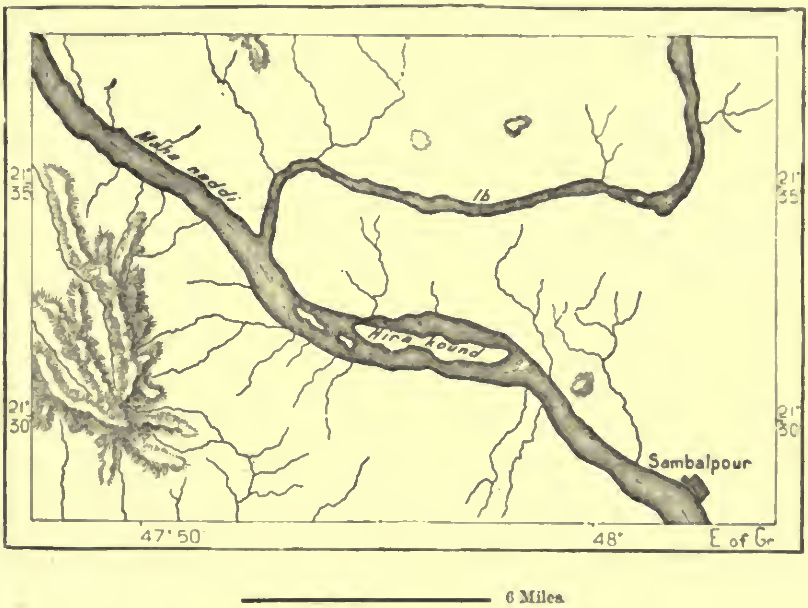
In the Upper Maha Naddi basin the most considerable town is *Raipur*, which lies at an elevation of less than 1,000 feet, almost in the centre of the old lacustrine basin, now comprising the fertile district of Chatisgarh, or the "Thirty-six Castles." In the same district *Dongargaon*, till recently a mere hamlet lost in the jungle, has become the chief centre of the corn trade. During the fairs here are gathered over 100,000 strangers, with 40,000 oxen and 13,000 carts. *Sambalpur* occupies an advantageous position on the Maha Naddi, which according to the seasons here varies from 130 to 5,300 feet in width. It has long been famous for its diamond mines, which were visited by Motte in 1766, and which are found in greatest abundance near the confluence of the Ib or Hebe. At low water about 5,000 jhara, or "washers," hasten to dam up the branch of the Maha Naddi which flows over the Hira-kund, or "Diamond Spring," where the precious crystals are found interspersed with the pebbles of the stream. In the hands of European speculators these works have never paid their expenses. Sambalpur has by some geographers been identified with the diamond mart of Sumalpur, which, however, seems to have been situated farther north on the Goal, a head-stream of the Brahmani. Lower

down are *Sonpur* and *Bod*, which, although capitals of two native states, are mere villages.

Cattak, that is, the "Fort," capital of Orissa, occupies the triangular head of the delta between the Maha Naddi proper and the Kajuri branch. This would be an excellent geographical position but for the dangers and uncertainties of the navigation in the shifting streams of the delta. Cattak has been enclosed by lofty embankments, by which during the floods it is converted into an island in the midst of the waters. The fort, from which it takes its name, is a mere heap of rubbish; but in the neighbouring mountains are found many interesting monuments of the Buddhist, Brahmanic, and Mohammedan epochs, including images cut in the live rock, and grottoes converted into temples. Every religious revolution in India has

Fig. 111.—Sambalpur Diamond Fields.

Scale 1 : 300,000.



left its trace on the sacred soil of Orissa, and the most picturesque sites have generally been chosen for the display of the artist's genius. The most remarkable group of temples lies some twenty miles south of Cattak, near *Bhuvaneshvar*, a small place which was formerly the capital of a kingdom. Most of the architectural remains found in the surrounding caves are of Buddhist origin. Here is one of the Emperor Asoka's numerous rock inscriptions, and another still more ancient, which records the history of a king of Magadha said to have flourished twenty-two centuries ago. Some of the temple sculptures reproduce the human figure with such truth and grace, that archæologists have felt inclined to attribute them to Græco-Baktrian artists.

As a "sacred land" of the Hindus, Orissa is divided into four regions, all of which are alike vestibules of heaven, and the inhabitants of which cannot fail after

death to enter into the realm of happy spirits. As soon as the pilgrim from the north has crossed the Baitarani, the "Styx of Hindu mythology," he enters a new world, and the Brahman priest warns him that he is about to penetrate into the domain of the terrible Siva and Parvati. South-eastwards, about the mouths of the Maha Naddi, lies the "Region of the Sun," at present little visited, notwithstanding the shrines which here still fringe the river banks.

The shores of Lake Shilka, according to the tradition formerly encircled by 7,000 temples, are also sacred to Siva. But of all lands the most hallowed, whose glory Siva himself cannot conceive, is the *Puri* district lying between two marshy strips on the coast, and beyond the route followed by invading hosts. Here Vishnu has reigned supreme for the last 1,500 years, and here stands the renowned temple of *Jagganath,* which has at times been visited by 300,000 pilgrims in a single year. Thrice blessed is he who has the happiness to die in sight of the "Gate of Heaven," and the tower surmounted by Vishnu's wheel and flag. So great is the efficacy of the sacred temple, that it effaces all caste differences. In presence of the god, Brahman and flayer of oxen are alike equal. "The faithful dear to me," says Vishnu, "are not the wise, learned in the four sacred writings, but the humble believer; to him you must give, from him receive; revere him as you would revere myself." In the temple court, the devotees, mingling without distinction of race or class, share in common the *maha prasad,* the consecrated food.

Fig. 112.—The "Sacred Block" of Vishnu.

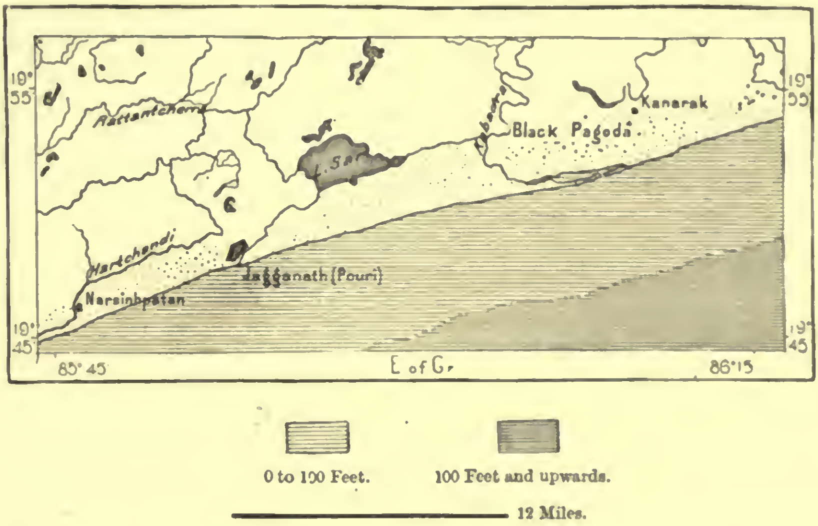
The sacred edifice, which is surrounded by an enclosure about 700 feet long on all sides, stands on the Nilghiri, or "Blue Mountain," a mere mound probably formed by the débris of an earlier Buddhist temple. It dates from the end of the twelfth century, the Mohammedan conquerors, who destroyed most of the Hindu sanctuaries in Orissa, having spared that of Jagganath for the sake of its rich revenues. The trade in popular superstition is in fact the only industry of Puri, whose 20,000 inhabitants live directly or indirectly on the credulity of the faithful. The priests and servants of the shrine, who number about 6,000, divided into 36 orders and 97 classes, are under the control of a raja, who bears the hereditary office of temple-sweeper. They send agents into every province to gather the pilgrims, to whom they promise salvation in exchange for a few presents made to the god and his ministers. A yearly income of nearly £40,000 is thus raised, and this is swollen by the revenue of the lands granted to the temple by the British Government. The famous Koh-i-Nur diamond had been bequeathed to the Puri sanctuary by Ranjit Singh, "Lion of the Panjab;" but the Crown jeweller refused

RUINS OF HAMPI—WAGGON-SHAPED TEMPLE. PROTOTYPE OF THE JAGGANATH CAR.

to surrender it without a written warrant from the dying king.* The rude statues of Vishnu, of his brother and sister, above which rises the highest pinnacle of the temple, are the most venerated images in India. In June or July every year 4,200 of the ministers yoke themselves to the famous car of Jagganath, a wooden structure 46 feet high, resting on 16 wheels, and draw it to the "temple garden," which lies on the shore about 1½ mile from Jagganath. This ancient Buddhist ceremony doubtless recalls the birth of Shakya Muni, so that the two great religions have become blended together under the name of Vishnu. The huge vehicle, which sinks deeply in the sand, takes several days to reach the grove, and it is commonly believed that numerous devotees throw themselves under its wheels in order to secure eternal bliss by dying in a state of grace. But such cases are quite exceptional, and when they occur the car is immediately stopped

Fig. 113.—Jagganath District.

Scale 1 : 550,000.



while the priests perform the ceremonies of purification. The *circir*, or practice of suspending the devotees by means of hooks inserted in the fleshy parts of the back, has also entirely disappeared, and was probably always prohibited by the priests of Vishnu, who is a "god of love," holding the sight of blood in abhorrence. At present religious zeal is waning, the number of pilgrims is yearly diminishing, and of these nine-tenths are women. Like Mecca, Jagganath is a hot-bed of infection; but the sanitary arrangements recently introduced tend to diminish the danger of epidemics.

Some 20 miles east of Puri, and near the shore, stand the ruins of *Kanarak*, a temple dedicated to the sun, and known to Europeans as the "Black Pagoda." Mutilated as they are by curiosity-seekers, and covered with the names of vulgar sight-seers, the Kanarak sculptures are still amongst the finest, dating from the best

* A. H. Keane, *MS. Notes.*

periods of Hindu art; and the building itself, which seems to have been erected towards the end of the ninth century, is regarded as the gem of native architecture. *Jajpur*, or *Yajpur*, the "City of Sacrifice," lying on the right bank of the Baitarani, is also noted for its ancient monuments, dedicated mostly to Siva and Parvati. Jajpur preceded Cattak as capital of Orissa.

European vessels were long prevented from approaching the Orissa coast by the shifting sandbanks fringing the shore, and the bars obstructing the mouths of the Maha Naddi. But in 1860 the French merchants of Calcutta ventured to send their ships up the Maha Naddi through the *False Point* branch, and soon after the supplies forwarded from Calcutta were discharged at the same place. False Point has since been thoroughly surveyed and provided with buoys and lights, so that it is now one of the most accessible ports on the east coast. Vessels drawing twenty-five or twenty-six feet find good anchorage in the harbour, which is sheltered by a tongue of land from the southern monsoon. But it is constantly in danger of being choked by the sands and mud, which are encroaching on the sea at an average rate of 120 feet every year. Nevertheless False Point* still remains a more important seaport even than *Balasor*, which was much frequented before the foundation of Calcutta, and which remained the seat of a Danish factory till the year 1846. Near this place formerly stood the city of *Subarnarekha*, at the mouth of the river of like name, where in 1634 the English founded their first factory on the Indian mainland. The Portuguese factory of *Pilpip* had already been established in the same district.

* Trade of False Point, 1875:—110 vessels of 118.375 tons; cargoes, £265,000.

CHAPTER XII.

GONDWANA, OR CENTRAL PROVINCES—UPPER BASINS OF THE SON, NARBADAH, TAPTI, AND GODAVERI.

TILL the middle of the present century this region was still to a large extent an unknown land. Away from the cities and main highways there stretched the dreaded regions infested by the Pindari marauders, or occupied by the Gond wild tribes. Some districts, wasted by the Mahrattas, had become complete wildernesses, where the jungle had overgrown fields and villages. At present the Central Provinces have been everywhere thoroughly explored, except in the south-east corner, bordering on the native State of Bastar. Gondwana is crossed by the most important line of railway in India, connecting Bombay with Calcutta, through Allahabad and Benares. Another line, penetrating into the southern portion of this region, will soon afford more direct communication between the two capitals. And although still one of the least densely-peopled countries in India, the population of these provinces is rapidly increasing.

Gondwana, or "Territory of the Gonds," whose natural limits correspond roughly to the administrative division known as the Central Provinces, occupies the culminating-point of the peninsula in respect of its drainage. The three great rivers, Tapti, Godaveri, and Maha Naddi, have their sources south of the great transverse depression formed by the Narbadah and Son Valleys between the Gulf of Cambay and the plain of the Ganges. Nevertheless the Gondwana Mountains are far from being as elevated as was at one time supposed. The Satpura Hills, which form the chief range of the whole region, have a mean altitude of scarcely more than 2,000 feet. Their past historic importance was due, not so much to their absolute height, as to their disposition, rising, like the second breastwork of a fortress, south of the Vindhyas and of the deep valley of the Narbadah. They are themselves supported southwards by a third defensive line, forming beyond the Tapti the border chain of the Dekkan plateau. The waves of Hindu migration were thus stemmed by a triple barrier line extending for over 600 miles east and west, with a breadth of about 300 miles north and south. Long ages of warfare and peaceful intercourse were needed by Aryan culture to force these ramparts,

and penetrate from the northern plains through the river valleys and gaps in the mountain walls to the upland plateaux. This slow work of conquest has not yet been completed.

The Satpura Range.

The term Satpura, that is, "Sevenfold" Range, is applied by geographers to the whole orographic system of the Central Provinces, although restricted by the Hindus to the western section comprised between the nearly parallel valleys of the Middle Narbadah and Tapti. No general name for these highlands is known to the aborigines, who designate each isolated mass or prominent peak by the nearest village, by the trees growing on the slopes, or the tutelar deity of the land. Nor do the heights themselves form a continuous unbroken range. They stand on a plateau of trap rocks, with a mean elevation of 2,000 feet, above which they rise in separate masses, or even secondary plateaux, also of volcanic origin. Several of these abrupt tabular formations are hollowed by deep depressions, where the rain-water is collected in natural reservoirs, which were taken advantage of by the feudal lords, who here crowned every summit with their impregnable strongholds.

East of the Satpuras, properly so called, broad erosive plains isolate the central group of highlands which contain the highest crests, including Mount Dhapgarh (Deogarh), which attains an elevation of 4,560 feet. These romantic uplands have been specially consecrated to Siva, and from this circumstance take the name of Mahadeo, or the "Great God." The greatest variety in the disposition of their valleys and in their vegetation is presented by these granite, metamorphic, limestone, sandstone, and basalt formations. The normal line of the upper plateaux is broken here and there by granitic peaks, whose sharp jagged sides form conspicuous objects in the landscape. But of all these mountain masses, at once the most remarkable and imposing are the precipitous slopes of Mahadeo, as seen from the southern valleys. Above the dense vegetation at its base rise its ruddy walls, scored with fissures giving shelter to a few patches of herbage, and terminating with quadrangular towers and pinnacles. From certain points of view the whole mass presents the aspect of a gigantic edifice raised by the hands of man. The flank of the mountain is broken by enormous chasms, formed, according to the local legend, by the trident of Siva, who hurled into these abysses the snakes, former masters of the land. From certain resemblances in their flora and fauna, the Pachmari - plateau, lying north of Mahadeo, has received the title of the "Northern Nilghiri."

The highlands, which continue the main axis of the system beyond Mahadeo, are separated from this group by the Upper Narbadah Valley. Like the western Satpuras, they present the same character of terraced plateaux, and like them are in many places overlaid with rocks of trap formation. From west to east the land rises on the Mandla plateau through a series of terraces to the Maikal border chain, which skirts the north-west side of the extensive Chatisgarh plain. Although the Maikal range has a mean elevation of scarcely 2,000 feet, it attains in the Lapha peak a height of 3,500 feet. Farther east, at the angular extremity

of the whole system, Lapha is rivalled by Amarkantak, source at once of the Narbadah and of several streams flowing to the Son and Maha Naddi. A large portion of this hilly region was formerly covered with forests of sal (*shorea robusta*), a tree which also occupies a narrow belt of land at the foot of the sub-Himalayas parallel with the terai formation, extensive tracts in the Rajmahal and Chota-Nagpore Hills, in the Eastern Ghats as far as the Godaveri, and in the Maikal range wherever these uplands are free from trap. Being covered with but a slight layer of humus, this igneous rock forms everywhere an impassable barrier to the encroachments of the sal. But the range of this useful tree is generally succeeded by that of the still more valuable teak (*tectonia grandis*). The distribution of the animal species corresponds in a general way with that of

Fig. 114.—Pachmari Plateau.

Scale 1 : 450,000.

12 Miles.

the vegetation. Thus the wild buffalo (*bubalus arni*), the marsh deer (*rucervus duvancellii*), the jungle fowl (*gallus ferrugineus*), are limited westwards by the domain of the sal. But they are again found in the Mahadeo Valley, where this tree has penetrated through the alluvial valley of the Narbadah.

Most of the sal and teak forests have disappeared from the more accessible districts of Gondwana. The natives had already cleared large tracts by their rude methods of tillage. At the beginning of the dry season they hew down the trees on the skirt of the forest, in order to get rid of them by fire before the rains set in. Then they sow their grain amid the ashes, trusting to nature for the rest. Such is the fertility of the soil thus enriched, that the first year's crops are generally extremely abundant. Next year there is a great falling off, and in order to secure a fresh harvest, the nomad husbandman clears by fire another strip of the forest.

The abandoned clearings become overgrown with bamboo and dense thickets of brushwood and thorny scrub, preventing the growth of large timber. Thus, notwithstanding the small area under tillage, the face of the country has already been completely changed in many districts, and unfortunately the most valuable forests have suffered most. The sal had also been tapped for its resins, and the teak cut down, to be converted into charcoal or sold for building purposes, when a still more wholesale waste began with the first appearance of the railway contractors in this region. Aware of the intention of the Government to take possession of the forests, they committed such ravages that it was soon found necessary to import from England and Norway the timber required for the works.

Tropical woodlands, such as one expects to find in these latitudes, are nowhere to be seen. But for the few palms or other characteristic trees visible here and there, the scenery might be taken for that of temperate Europe. During the dry season all the foliage disappears except that of the sal; not a flower is anywhere to be seen, and all nature presents a dreary, monotonous aspect. In the cultivated districts the mhowa is the only large tree which, thanks to its edible flowers, is always respected.

THE NARBADAH AND TAPTI RIVERS.

The Narbadah, which is often taken as the limit of North India and the Dekkan, descends from its now exhausted upper lacustrine basins, through a series of romantic gorges, to the point where it assumes its normal south-westerly course to its estuary in the Gulf of Cambay. The natural limit between its upper and middle course is indicated by the "Marble Rocks," a narrow gorge, where the stream forms a magnificent fall 30 feet high. For a distance of about two miles it flows between its marble walls, carved by nature's hand into huge pillars and other fantastic shapes, and rises to a height of 100 feet on both sides of the rapid current, which is here contracted to a width of scarcely more than 60 feet. Varied here and there with veins of dark volcanic rocks, intensifying by contrast their dazzling whiteness, these bright marble walls blend in perfect harmony with the blue sky and blue waters of the stream. Not a shrub or tuft of herbage finds a footing on ledges of bare rock, which are relieved only by the swarming bees, which have here built their hives. The narrowest part of the gorge is crowned by the circular temple of Bheraghat, which, with its colonnades formed by female statues, is justly regarded as one of the gems of Hindu art. The Marble Rocks are also famous in Aryan mythology. The legions of snakes following Hanuman are fabled to have leaped across this abyss, and the heavenly elephant on whom Indra was mounted left the imprint of his foot on the hard rock. At this spot the Narbadah is accordingly held in special sanctity, and the bodies of the dead are brought from great distances to be cast into its waters, where they often become the food of crocodiles. Next to the Ganges the Narbadah, or Rewa, is the most sacred stream in India, and according to an ancient prophecy it is destined to remain holy for ever, whereas the Ganges is doomed to lose its efficacy about

GORGE OF THE MARBLE ROCKS, UPPER NARBADAH.

the end of the present century. The very pebbles of its bed are sacred, and worn as amulets by the worshippers of Siva. No oath is more binding than that uttered by the Hindu standing in mid-stream, wreathed with a garland of red flowers, and holding a few drops of the divine waters in his right hand. As on the banks of the Ganges, here also are met pilgrims, who have undertaken the task of ascending along one side from the estuary to the temple at the source of the Amarkantak, and returning on the other to the coast. This *pradakshina*, or complete pilgrimage, about 1,560 miles long, usually takes two years, owing to the numerous stoppages at the sanctuaries lining the whole route. The central regions have thus been gradually opened to Hindu influences far more effectually by religion than by commercial or military expeditions. The pilgrims who penetrated into the Gond territory were sure of protection, whereas the traders were plundered and invasion resisted by armed force.

Below the Marble Rocks, the river enters an alluvial plain, which was formerly a vast lacustrine basin that has been gradually filled in. Similar formations follow in succession, thus developing a broad and fertile valley, which runs for a distance of about 240 miles east and west between the Malwa plateaux and the Mahadeo highlands. Through the extension of agriculture, the formation of settled urban communities, and the construction of highways, a sort of inner Aryan India has here been formed in the heart of the Dravidian domain; and by the absorption of the side valleys the country has been gradually brought within the influence of Hindu culture. But the lacustrine plains traversed by the Narbadah have no direct outlet towards the Gulf of Cambay, from which they are separated by a series of gorges through which the river forces its way from rapid to rapid seawards. Hence it is obstructed by too many falls, and far too irregular in its discharge to be available for navigation. Its long narrow basin may be compared to a deep ditch running from the west coast into the heart of the peninsula. In the northern section of its basin there are no side valleys, or any important tributaries. All its affluents come from the south, and are subject to the same climatic influences as the central valley, so that during the monsoons the whole fluvial basin receives its due share of the rainfall. Thus the floods take place simultaneously or at short intervals on the main stream and all its feeders. The discharge at the entrance to the Konkan plain has been estimated at 1,760,000 cubic feet per second, or twice that of the Mississippi at high water. But it is hard to believe that some error has not crept into the calculations of the English engineers, and in any case the Narbadah, which reaches the sea through an estuary 12 miles wide, shrinks in winter to an insignificant stream sluggishly winding through the sands.

The Tapti, whose farthest source is on the west slope of Mahadeo, flows first through a slight depression in the plateau, but soon plunges into a deep basalt chasm with numerous secondary fissures on both sides. The whole country is thus broken into trap or greenstone masses, varied with irregular eminences, whose weathered surfaces glitter with countless nodules of white agate. These plateaus are partly clothed with forests of salei (*Boswellia thurifera*, or incense tree), mingled

with scrub and brushwood, which is fired in winter by the peasantry. On emerging from the upper gorges the Tapti, like the Narbadah, penetrates into a deep valley or lacustrine depression now filled up by its alluvia. Here it is joined by its great tributary, the Purna, which also traverses an old bed of a lake, which at all times afforded communication between the west coast and the Upper Godaveri basin. Below the alluvial plains the Tapti has also, like the Narbadah, to pierce a series of gorges in order to reach the coast region. The resemblance to the parallel stream is maintained even in the extreme irregularity of its annual discharge, which rises from 150 cubic feet per second in the dry season to 635,000 during the monsoons. Its floods are often very disastrous, and, from their effects, Surat and the other riverain towns have to protect themselves by a triple line of embankments.

South of the Mahadeo highlands stretches the vast irregular plain of Nagpur, which has a mean elevation of 850 to 1,000 feet. Here rise the Wardha, the Waingánga, and other affluents of the Pranhita or Upper Godaveri, which are broken into secondary basins by detached spurs of the Satpura system. This region, which is one of the most fertile in the peninsula, contains extensive tracts of "black lands," where cotton is chiefly cultivated. The Upper Godaveri plains, which lie parallel with the old lacustrine reservoirs of the Tapti and Narbadah, and which were themselves at one time flooded basins, naturally attracted the surrounding civilised populations of India. Hence here also, as well as in the neighbouring uplands, the wild aborigines of the plateaux were gradually reduced or absorbed.

Inhabitants.—The Gonds.

Nevertheless numerous communities have still preserved their primitive speech, habits, and customs. Doubtless three-fourths of the entire population of the Central Provinces consist of Hindus speaking Aryan tongues, and regarding themselves as completely distinct from the wild tribes of the interior. Nevertheless certain districts still deserve the name of Gondwana, or "Land of the Gonds," a word which, like Khond, is derived from the Telugu *konda*, or highlands. Where they have come in contact with the Hindus of the plains, the Gonds or Koi have partly adopted their speech and usages; some of their tribes have even passed the transitional period, and have ceased to speak or understand the old Dravidian tongue. Those who have preserved their ethnical independence are still numerous enough to constitute the most important of all the uncivilised aboriginal groups. They number over 1,500,000 in Gondwana, and at least 2,000,000 in the whole of India. But they have lost all political cohesion, and are now broken into isolated sections by the intervening Hindu plains and valleys. During the last century the various Gond states had already been reduced by the Mahrattas, but they still remember their former national glories, and several descendants of their royal families are still pensioners of the British Government.

The Gonds must certainly be regarded as a people who have fallen from a higher state of culture. The early sacred writings already speak of their cities,

and the history of more recent times shows them as the rivals of the Hindus in the arts of peace and war. In the forests and jungles are found many remains of their palaces and temples, while the traces of routes, dykes, and irrigating canals attest their ancient civilisation. But oppression, poverty, and an enforced forest life have necessarily modified their customs, and by mingling with the jungle tribes they have gradually lapsed to the savage state. Those known by the designation of Assul, or the "Pure," have built their villages in the heart of the forests, as far from the main routes as possible. They carefully avoid all contact with strangers, and many English explorers have traversed Gondwana in every direction without meeting any pure descendants of the former masters of the land. One of their tribes consents to pay the taxes only on condition of not being obliged to see the collector. On arriving near their village he beats the drum, then withdraws, and on his return finds the amount duly deposited on a stone. But when brought face to face with their former conquerors they show a haughty carriage, and condescend neither to flattery nor falsehood, like most of the Hindus. They are generally distinguished by their courage, uprightness, and truthfulness. Nearly all present the same physical traits—short thick-set frames, broad face, flat nose, thick lips, black bushy hair. The men wear one earring only, but the women are loaded with jewellery—bracelets, rings, necklaces—and also tattoo the face and legs. Some of the tribes wear nothing but a tuft of foliage, and even this rudimentary costume is said to be a modern innovation. Others are satisfied with smearing the body with mud and ashes, and when the keen blast prevails on their uplands they kindle great fires to keep themselves warm. Some are even ignorant of agriculture, and when the game fails they are driven to live on roots, berries, wild honey, reptiles, and vermin, often disputing the carrion with the vulture. They have been accused of killing the old members of the tribe, and devouring them at their public feasts. In any case it is certain that human sacrifices were formerly offered to their gods, but these victims are now replaced by dolls or straw puppets.

The Gond polytheism knows no limits. Sun, moon, rocks, trees, torrents, the passing wind, the spirits of the departed, the evil genius concealed in the foliage, everything is a god. Worship is especially paid to formidable beings, such as the Tiger-God, who is confounded with Vishnu, and who, of all superior powers, is invoked with the greatest fervour. But the Hindu divinities are also venerated, and especially the héroes Pandwides, Bhima, and Arjuna, from whom the Gonds claim descent. Intercourse is held with the outer world through the Brinjari traders, who pass from village to village, exchanging English or Indian woven goods for the local produce. In this way the new ideas are gradually penetrating into the country, and in many districts the aborigines are becoming assimilated to the surrounding Hindu communities.

Various wild tribes distinct from the Gonds are scattered over Gondwana. The Kurku, who number 40,000, centred chiefly in certain valleys of the Mahadeo highlands, are of Kolarian stock, and differ little from the Kols of Chota-Nagpore and Orissa, although they have forgotten the national speech. The Baigas, usually

classed also as Kolarians, are regarded by Forsyth as forming a distinct group. They number about 20,000 in Gondwana, where they are scattered in small groups all over the country, but chiefly in the Maikal Hills. Physically they differ little from the Gonds, except in their darker complexion and more robust frames. Although now speaking a Hindu dialect, they claim to be the true aborigines, and one of their tribes even takes the name of Bhumiya, or "Children of the Soil." They are distinguished by great honesty and a strict observance of the national usages,

Fig. 115.—Jabalpur and Narsinghpur.

Scale 1 : 1,500,000.

peacefully governing themselves by their own laws, without the intervention of the English police. Of all the aborigines of Gondwana the Baigas alone use poisoned arrows in pursuing large game, and the aconite employed for the purpose is procured from dealers, who probably obtain it from the Mishmis of the East Himalayan valleys. The Gonds frankly acknowledge the superiority of the Baigas, from whom they get their priests and wizards. The Baiga shaman holds commune with the spirits, and knows the art of expelling them from the places which they infest. He

can bring down the rain, drive off pestilence, exorcise tigers, and render them harmless. When one of these beasts devours a man—a not unfrequent occurrence, especially in East Gondwana—the villagers call in a Baiga magician, who assumes the character of a "man-tiger," bounds along like a feline animal, springs on the prey, crushes its bones, and drinks its blood. He is thus supposed to transfer the soul of the tiger to himself, depriving him of all taste for human flesh and inspiring him with an appetite for other game. English travellers speak with horror of these spectacles, and especially of the convulsions required to conjure tigers and evil spirits, or to arrive at the contemplation of the deity.

Besides the Dravidian Gonds and the Kolarians, other ethnical groups are met in Gondwana, whose classification presents great difficulties. Such are the Goli, or Gauli, an obscure community of shepherds in the Satpura Hills, whom some regard as descended from the Gauli, whose dynasties long held sway over the country, and whose ancient strongholds still crown the hills here and there. Of unknown affinity are also the Naghbansi, or "Sons of Snakes," whom most of the princely families claim as their ancestors, and who have left their name to Nagpur, the largest city in the country. The Naghbansi of the Central Provinces have all been outwardly Hinduised, but others dwelling in the Jajpur Hills north of Orissa are distinguished by their exceptionally flat features and low broad nose, with wide nostrils, placed almost over the cheeks. Traditionally the Naghbansi belong to a race distinct from the Gonds, who, unlike them, show no special veneration for snakes.

Topography.

Jabalpur, the chief place in the Upper Narbadah valleys, has become since the middle of the present century one of the important cities of India. The central position which it occupies on the main line of railway between Bombay and Calcutta, and at the junction of the route from Rajputana to the Maha Naddi basin, has made it an entrepôt for all the produce of Gondwana, and for English manufactured goods. The natural and artificial lakes of the district, the clear waters of the Narbadah in its marble gorge, the pleasant hills, groves and thickets of the neighbourhood, have attracted many English to Jabalpur, and it has even been often proposed as the most convenient site for the capital of the Anglo-Indian Empire. Here is a famous industrial school, where the "thugs" and other convicts, surrounded by their families, have learnt the art of weaving carpets, tent canvas, and cordage. North-west of Jabalpur lies the ancient city of *Garha*, formerly capital of a Gond state. An isolated eminence in the neighbourhood is still crowned by the fortress of *Madan mahal*, erected in the twelfth century.

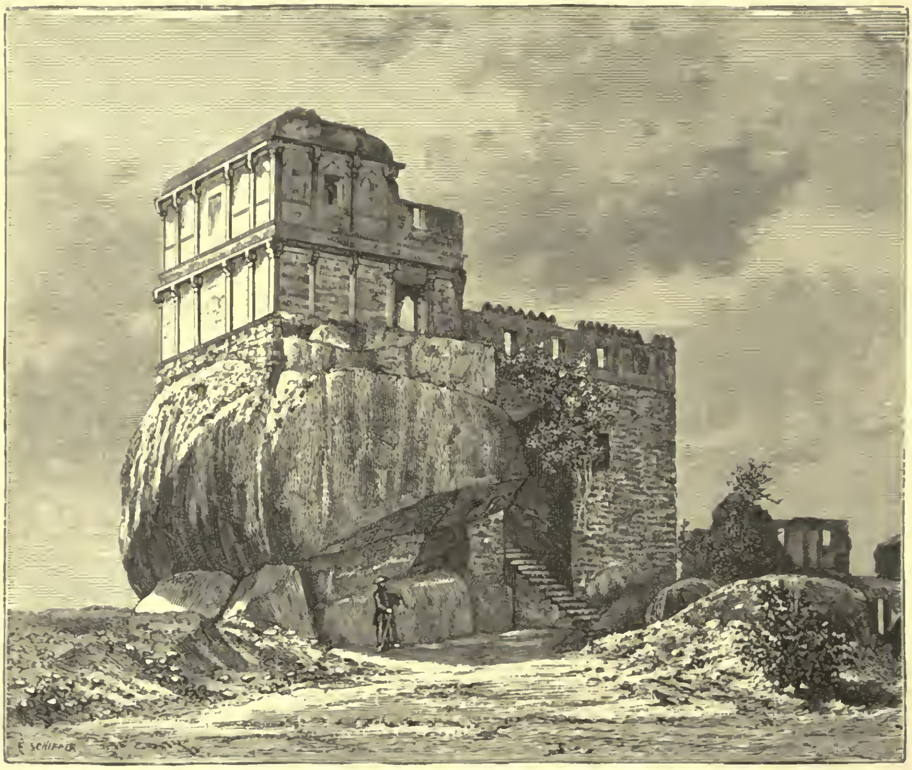
Beyond the Marble Rocks the Narbadah emerges on the alluvial plains of *Narsinghpur*, the "City of Narsingh," that is, of Vishnu the "Lion-God." Towards the south-east a plateau of the Mahadeo group has been chosen as a health resort and military station, which were founded here in 1870, near the famous shrines of *Pachmari*, or the "Five Grottoes."

In the portion of the Upper Tapti Valley included in the Central Provinces, the

only important place is *Burhampur*, which was formerly capital of the Dekkan, and then covered a space of over 5 square miles. When visited by Tavernier in 1658, it was no longer a royal residence, and most of its houses had fallen to ruins. Nevertheless it was still a "great city," and its cotton fabrics were exported to Persia, "Muscovy, Poland, Great Cairo, and other places." Burhampur is now merely a district capital, standing 2 miles from the railway, which here turns aside to skirt the hill crowned by the garrison town of *Asirgarh*. Trade and the industries have been still further displaced to *Khandwa*, lying to the north on the plateau which separates the Narbadah and Tapti valleys.

Nagpur, or "Snake-town," the largest city in the Central Provinces, lies south of the highlands on the plain watered by the head streams of the Godaveri.

Fig. 116.—Jabalpur—The Madan Mahal.

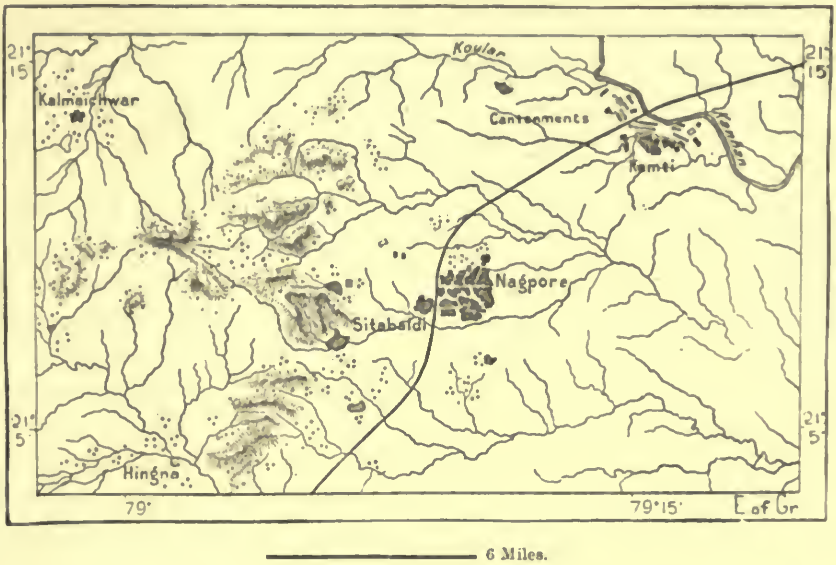


Connected with the railway system by a branch from the Bombay line, Nagpur is destined one day to become the central station between the two great seaports of the east and west coasts. It already enjoys a considerable trade, and its cotton goods still compete successfully with those imported from Great Britain. There are some fine monuments, gardens, and temples in the city; but the English have taken up their quarters at the foot of the neighbouring Sitabaldi Hill, which has become the seat of the provincial administration. *Kamti*, which lies 6 miles to the north-east, has been chosen for the military station. During the summer heats the British residents of Nagpur and Kamti withdraw to *Chindwara*, and the other

towns situated amongst the hills. *Deogarh,* ancient capital of Gondwana, stood on one of the bluffs overlooking the plain of Nagpur. Here are some fine ruined temples, parks, and reservoirs. The plain is studded with numerous lakelets, the remnants of extensive basins, and it is now proposed to create a large artificial lake by damming the waters of the river Kanham. This reservoir will have an area of 30 square miles, and will suffice for the irrigation of 450,000 acres.

The fertile and relatively well-cultivated plains, watered by the head streams of

Fig. 117.—Nagpur and Kamti.
Scale 1 : 380,000.



the Godaveri, contain several trading-places, such as *Seoni,* the chief entrepôt between Nagpur and Jabalpur ; *Ramtek,* city of Rama, noted for its excellent betel leaf ; *Bhandara, Paoni, Umrer,* all famous for their cotton goods ; *Hinganghat,* one of the chief marts in India for the exportation of cotton yarns. It also forwards large quantities of butter by the railway directly to Bombay. Below the confluence of the Wardha and Pain lies the ancient but decayed city of *Chanda,* whose picturesque ramparts, nearly 6 miles in circumference, now enclose several villages, cultivated and waste spaces. Near *Warora* are some rich carboniferous deposits, which yield the best coal in the Central Provinces.

CHAPTER XIII.

WEST SLOPES OF THE PLATEAUX AND GHATS.

BARODA, KANDESH, KONKANS.

THE comparatively restricted natural region watered by the Lower Narbadah and Tapti, and skirted on the east by the Western Ghats as far as the Gangawali river valley, is one of the best-defined tracts in India. The eastern barrier is doubtless of moderate elevation, and easily scaled by the *ghat*, or "steps," whence it takes its name. Nevertheless, it forms throughout its entire length a clear parting-line between two climates, two floras, two soils, two agricultural systems, two civilisations. Towards the north alone the inhabitants of the Konkans find their narrow coast lands spreading out into the broad plains traversed by the two parallel streams which have their rise on the central plateau. These watercourses, overflowing all the lowlands, often become themselves natural limits between the two regions. But for most of the year their valleys, and those of their affluents, afford easy access to the uplands of the interior.

It is precisely at the angle here formed by the Gulf of Cambay that the great historic highway begins which connects the west coast of India with the Ganges and Jamna basins. Before the opening of the modern artificial routes this was the natural emporium for the interchange of foreign merchandise with the produce of the northern plains. Hence, notwithstanding its dangerous character, this section of the Indian seaboard has been visited by shipping from the remotest times. Pent up in the narrow strip lying between the Ghats and the coast, the native populations naturally turned towards the Arabian Sea, and developed commercial relations with the opposite shores. The treasures acquired by trade or piracy were accumulated in the maritime towns of the Konkans. But owing to their restricted territory, these towns never rose to the position of imperial capitals. They were fain even to accept foreign masters far more frequently than they could themselves give rulers to the neighbouring lands. The political unity of this region was also broken by the great length of the Konkans, stretching for hundreds of miles in a narrow belt between the Ghats and the ocean. Even under British supremacy a large number of petty states have still been enabled to preserve a certain indepen-

dence along this section of the Indian seaboard. Besides these principalities and the districts directly administered by the English, a portion of the land has also remained in the possession of the Portuguese, the first European nation who landed in the peninsula.

The Western Ghats.

Most European travellers who visit India for the first time approach it by the western slope of the Ghats. Here they at once enter a picturesque region, whose natural beauties are elsewhere unsurpassed in the peninsula. The eastern horizon is bounded by the long line of the Ghats, half shrouded in a bluish haze, and through their gaps affording here and there pleasant vistas of the uplands. Below the arid escarpments and the verdant slopes of the hills stretch the still more verdant plains, broken by projecting headlands into irregular amphitheatres. The dense vegetation is relieved only by the towers and pinnacles of towns half buried in the foliage, and the surf-beaten shore is fringed by thickets of palms waving gracefully over the fishermen's hamlets. The sea is everywhere enlivened by the shipping plying between the surrounding ports, or sailing to every point of the compass.

The Satpura range is completely separated by the gorges of the Tapti from the Ghats, although when seen from the coast these mountains present the appearance of an unbroken cordillera. The Satpura system merges gradually east of Bharuch in a low hilly district abounding in agates and carnelians. South of the Tapti the Sahyadri, or Ghats, properly so-called, begin with a number of nearly parallel ridges about 2,000 feet high, running east and west, but connected towards their western extremities in such a way as to form towards the sea a regular series of escarpments. Between the Tapti and Bombay this outer edge of the Ghats runs north-east and south-west, but farther south it follows the normal direction of the coast. These two parallel lines of mountain and seaboard evidently depend on the same movement of the earth's crust, and should be regarded as geological phenomena of a like order. The trap formations of which the scarps of the Ghats mainly consist are old cliffs which formed the coast-line before the general upheaval of the land that took place, probably, in the tertiary epoch. The *cremnoconchus*, a species of freshwater mollusc inhabiting the streams of the Sahyadri Hills, is so closely allied to the neighbouring marine varieties of *littorina*, that zoologists regard it as of like origin. It seems to be evidently descended from varieties which peopled the foot of the Ghats, when these mountains were washed by the sea.

Between Surat and Goa, if not elsewhere, the Ghats consist exclusively of successive layers of lava streams. The plains stretching at their foot were also covered to a thickness of from 3,000 to 4,000 feet with igneous rocks, which have been gradually worn away by the rains, tides, and rivers. Geologists have long sought in vain for some of those ancient craters, whence flowed such prodigious quantities of lava, representing a volume far more extensive than the whole range of the Pyrenees. But it is now sufficiently evident that these vanished cones

stood on the site of the present lowlands, all the upper formations of which have long been swept away. East of Bombay the Ghats have developed an amphitheatre of rocks somewhat in the form of a segment of a vast crater. Here rise a number of circular eminences, hollow at top, and mostly crowned with clumps of trees, whence were formerly discharged showers of stones and ashes. The plains are crossed by walls of trap, which have resisted the action of the weather, and which intersect each other in every direction between the extinct volcanoes. These trap formations indicate the crevasses through which the molten streams formerly escaped.

The *ghats*, or "steps," by which the range is interrupted at intervals, have naturally acquired exceptional importance, as affording direct communication between the peoples of the coast and the plateau. North-east of Kalyan lies the Thal, or Kasara ghat, traversed by the main highway and by the railway from Bombay to Calcutta, which, by a gradient of 26 millimetres in the yard, attains an elevation of 1,900 feet. The Bhor ghat, formerly known as the "Key of the Dekkan," is even lower, being only 1,800 feet high; but it is crossed at a much steeper incline by the Bombay-Madras railway, which, before the opening of the lines over the Alps, Rocky Mountains, and Andes, was regarded as one of the greatest triumphs of modern engineering skill. All the other ghats south of this pass have hitherto been utilised only by tracks and carriage-roads, but they are so numerous that every town and village on the coastlands enjoys direct access to the plateau. Most of them are jealously guarded by *garhs*, or forts, whose frowning ramparts crown every rocky prominence. Some of these strongholds are perched on the edge of precipices accessible only by steps hewn in the live rock, or by hidden galleries.

The appearance of surf-beaten cliffs and headlands projecting seawards is best preserved by the Ghats, which, south of the Konkans, tower above the native State of Sawantwari and the Portuguese territory of Goa. Here the edge of the plateau is in many places furrowed by a thousand indentations resembling the fjords of the Norwegian seaboard. Ascending from the coast lands, the traveller becomes entangled in a labyrinth of deep ravines, at last emerging suddenly on the open plateau of the Dekkan, varied here and there only by a few low hills and ridges. But south of the Kell ghat, between Goa and Dharwar, the trap disappears altogether, being here replaced by gneiss, micaceous schists, and other metamorphic rocks. Hence the hills now assume a totally different appearance. The cliffs lose their sharpness of outline, and the range itself no longer forms a complete parting-line between the waters flowing to the Arabian Sea and Bay of Bengal. On either side of the main axis the transition is made without any abrupt contrasts between the bare rock and the vegetation of the plateau. The system of the Ghats may even be said to be completely interrupted by the valleys of the Kaoli and Gangawali, which rise on the eastern slopes, but flow to the west coast. At no distant period this region of lavas will be skirted on the south by two lines of railway connecting the inland cities with the ports of Marmagão and Karwar.

The rivers of the Konkans between the Tapti and Kaoli being confined to the

THE BHOR GHAT—GRADIENT OF THE RAILWAY NEAR KHANDALA.

narrow coast lands, some 30 miles broad, are all little more than mountain torrents with short rapid courses seawards, and fed only by small rivulets. Nevertheless, the abundant rainfall, ranging on the western slope of the Ghats from 150 to 280 inches, imparts during the wet season considerable importance to these torrents, some of which then discharge a volume comparable to that of some of the large European rivers. Nearly all reach the coast through estuaries several miles wide, through which the tide penetrates far inland during the monsoons, while the alluvia are carried with the ebb far seawards. Hence on this side of the peninsula no deltas can be developed like those of the Maha Naddi, Godaveri, Kistna, and Caveri, on the Bay of Bengal. Even the Narbadah and Tapti, which send down

Fig. 118.—Garhs of the Ghats.—Visalgarh.

Scale 1 : 235,000.

such copious volumes during the rains, form no exception to this rule. It has been calculated that the sedimentary matter discharged into the Gulf of Cambay by the Narbadah and other streams during the wet monsoon would, under ordinary conditions, suffice to fill up that inlet in about a thousand years. But not more than a hundredth part of this matter settles on the sandbanks of the estuary, all the rest being carried away and distributed by the marine currents over the bed of the sea, or along the coast of Malabar, the Laccadives, and Maldives.* Were the bed of the Arabian Sea to be suddenly upheaved some 65 or 70 feet, the gulf would immediately be transformed to a delta, ramifying its branches like the

* W. Sowerby, "Transactions of the Bombay Geographical Society," vol. xix. 1871.

ribs of a fan. The tidal channels, separated from each other by the so-called Malacca sandbanks, would be changed to estuaries, and the shallows to plains; but the geographical features would remain unmodified, for nowhere else is there to be found a more regular submarine delta. The plains skirting the Lower Narbadah and Tapti, although now in many places far above the level of the highest floods, were themselves probably old marine beds, upheaved by a general rising of the land. By similar movements the cliffs of the Ghats have been lifted high over the waves which formerly beat against their base. Traces of upheaval are evident at several points along the coast. Some distance inland are found old beaches covered with marine shells, which belong to the living species of the neighbouring waters. But the period of general upheaval has been followed by the contrary movement, or at any rate many local subsidences have taken place. Thus the city of Bombay, although built on an upheaved island, connected by raised beds with other islands, skirts on the east an ancient beach now covered by 13 feet of water, where the roots of a submerged forest are still found in their original position.

Inhabitants.—The Parsis.

The inhabitants of the Konkans and of all the western slope of the Ghats have been so long in relation with the rest of the world that all traces of an aboriginal element have entirely disappeared. The present populations, whether Hindus, Mohammedans, Parsis, or Strangers, are grouped not in tribes but in castes, and the languages spoken by them have all a rich literature. In the north the prevailing idioms are the Gujarati and Mahratti, with its various Konkani and Goan dialects. Both being derived from the Sanskrit, and written with the same Devanagari character, these two languages have been adopted by the foreign communities settled in the country. South of Goa the Aryan is replaced by the Dravidian linguistic domain, the current language here being the Kannada or Kanarese, written with a peculiar character resembling the Telegu. The limits of this dialect and of the Aryan tongues mark the ethnical frontiers between Southern India and the rest of the peninsula.

Of all the foreign peoples settled in the cities of the Konkans, the Parsis have taken the highest social rank next to the English masters of the land. As indicated by their name, they are of Persian origin, being descended from the followers of Zoroaster, who left their country to escape from the sword of the Mohammedan invaders. They settled first in the island of Ormuz, where their commercial habits laid the foundations of the prosperity which that entrepôt of the Indian seas was destined one day to enjoy. But being driven from this refuge, they sought a final retreat in the peninsula of Kattyawar, where they gradually founded flourishing communities in all the seaboard towns. In spite of constant persecutions, their spirit of solidarity enabled them to prosper, and they are at present certainly more numerous than the unhappy fugitives who originally fled from the Mohammedan fanatics. The Parsi communities still scattered over Persia scarcely number more than 5,000 souls altogether, whereas there are no less than 80,000 in British

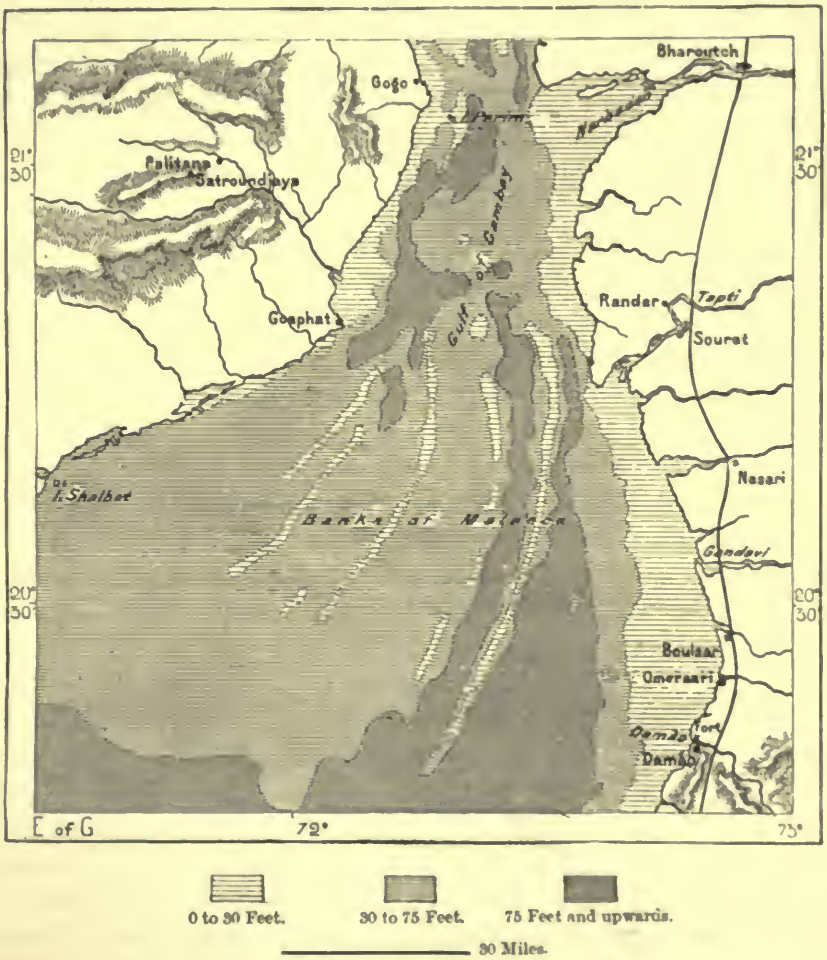
India, and to these must be added the commercial settlements founded under the protection of the British flag in all the ports of the far East.*

In proportion to their numbers they have accumulated far more capital than any other nationality in India. Some of their bankers rank amongst the most influential in the world, and already control most of the large undertakings in Bombay. Even in London some graceful structures are due to their munificence.

Having forgotten their old Zend mother tongue, no longer understanding the meaning of their liturgy, and speaking Gujarati and English alone, the Parsis

Fig. 119.—Sandbanks in the Gulf of Cambay.

Scale 1 : 1,900,000.



have preserved of their religion nothing but the symbols and empty forms. They venerate the sun and fire, and, like the Galchas of the Pamir, are careful never to extinguish the flame with their impure breath. Most of them have preserved the

* Parsis in the Bombay Presidency (1872)	66,498
,, Baroda	7,238
,, Bengal	1,123
,, Damão	170

national costume, even to the peculiar headdress covered with oilcloth. But certain ablutions and other ceremonies have long been discontinued. The Parsi religion is thus gradually merging in a vague deism and a moral code, whose special virtues are benevolence and truthfulness. There is little more than a formal difference between the English Unitarians, the Parsis, and the Hindu adherents of the recent Brahma-Samaj movement. What chiefly distinguishes the Parsis in the eyes of the vulgar, are their funeral rites. In Bombay, Karachi, and all other towns where they have settlements, conspicuous objects are the *dakhma*, or "Towers of Silence," where the dead are exposed, to be devoured by the vultures; for their decomposed bodies must pollute neither earth, water, nor especially fire, the pre-eminently sacred element.

The descendants of the half-caste Portuguese settled in the ports of the Konkans since the time of the conquest are far from occupying a social position comparable to that of the Parsis. Nevertheless, through their learning and wealth, some few among them have been admitted into European circles. Most of these half-castes, employed as clerks, notaries, interpreters, serve as middlemen between the Europeans and natives. The negro slaves brought by the Portuguese from Africa have also left a posterity which has become diversely intermingled with other descendants of Africans, and especially of pirates from Somaliland. Many families also claim Abyssinian descent. According to the local tradition, an Ethiopian merchant obtained leave in 1489 to land three hundred chests on the island of Janjira, some 45 miles south of Bombay. Each of these chests contained a soldier, and the three hundred, after seizing the island and a fort on the neighbouring coast, founded a republic of pirates. Growing in power, the Abyssinians of Janjira formed alliances with kings and emperors. Under Aurengzeb they were entrusted with the safety of the port of Surat and of the Mohammedan pilgrims to Mecca. The princely families of Janjira and of Jaffarabad in Kattyawar claim descent from these conquerors of the fifteenth century. They call themselves Habshi—that is, Abyssinian—but they are commonly confounded under the name of Sidi, or "Lords," with foreigners of African origin.

The other Mohammedans of the country, who are nearly all Sunnites, include some Afghans, Turks, Arabs, and Persians, besides the native Hindus formerly converted freely or by force. The Mussulman traders are grouped in distinct corporations of Borahs, Khojahs, or Memons, and have relations chiefly with the ports of the Persian Gulf, the Red Sea, and east coast of Africa. The Baniahs (Banyans) or Hindu merchants trade with the same places, and are met in all the East African ports, but especially in Zanzibar. In Bombay they form two distinct classes—the Baniahs, properly so called, originally from Gujarat, and the Marwari from Rajputana—who have monopolised the trade of so many parts of India.

Topography.

The city of *Baroda*, which is the largest place in South Gujarat, stands on both banks of the Visvamitri, a small southern affluent of the Mahi. Capital of a

semi-independent native state, Baroda, with its vast suburbs, is a city of palaces, and residence of one of the wealthiest rulers in India. While retaining the title of Guikwar, or "Cowherd," derived from his Mahratta ancestors, the lately deposed sovereign of Baroda delighted in magnificent fêtes, processions, hunting-parties, and accumulated vast treasures, including some of the finest diamonds in the world. This capital is one of the few places in India where elephant and rhinoceros fights are or were till recently held to amuse the public. Although metropolis of a "sovereign" state, with a regular army and park of artillery, Baroda is commanded by the British cantonments, which are under the control of the English Resident. About 14 miles to the south-east stands the city of *Dabhoi*, the ancient *Dharbhavati*, which is still surrounded by a rampart 2 miles in circumference and 40 feet high. *Jambusar*, lying to the south-west, formerly enjoyed a considerable trade through the estuary of the Tankaria, which flows to the Gulf of Cambay. Although this coast traffic has been nearly destroyed by the railway, Jambusar still retains a certain importance for its local industries and cotton trade.

Bharuch (*Broach*), the *Berygeza* of the Greek geographers, is a very old place, perched on a bluff some 65 feet high, overlooking the right bank of the Narbadah, which is here crossed by a railway bridge 4,150 feet long, and supported by sixty-seven piers. Often destroyed, Bharuch was always rebuilt on the same convenient site, above the level of the inundations on the great historic highway of the seaboard. It was formerly famous for the products of its looms, said by the Portuguese conquerors to be "the finest woven fabrics in the world." Here the English and Dutch had established factories to share in the export trade to every part of the East, from Mombaza to Sumatra. But the local industries were ruined by the introduction of European goods, and the population declined rapidly. Recently, however, the place has recovered some of its prosperity, thanks to the large quantities of cotton now grown on the neighbouring plains and forwarded by rail to Bombay. The agate vases mentioned by Pliny are supposed to have been cut from agates procured in this district, and Thevenot speaks of the importance of this trade in his time. The chief agate and jasper mines are at *Rattampur*, some 12 miles east of Bharuch, but they have lost most of their economic importance, being now rented for the trifling sum of £280 per annum. The maritime trade of Bharuch has also been reduced to a little coast traffic with the neighbouring ports, all the deep-sea navigation having completely ceased.* The most remarkable natural curiosity of the district has also nearly disappeared. This was a banian tree on an island of the Narbadah, spoken of by all travellers, and in 1780 forming a forest of three hundred and fifty trunks and three thousand secondary stems.

Surat occupies on the south bank of the Tapti a position analogous to that of Bharuch on the Narbadah. Mention is first made of this place at the epoch of the Mohammedan invasions, after which it rapidly acquired a commercial position of supreme importance. At the end of the seventeenth century it was the busiest mart in India, and was then known as the "gate of Mecca," most of the Mussulman pilgrims to the caaba embarking at this port. Its Portuguese factories had been

* Average maritime trade of Bharuch:—1837 to 1847, £1,150,000; 1874, £392,000.

followed by other European establishments, founded by the English, Dutch, and French, and during the monsoons such was the throng of foreign traders, that, according to Thevenot, late arrivals could find no lodging. At the close of the eighteenth century Surat was the largest city in the peninsula, with an estimated population of 800,000; but in the middle of the nineteenth century this had been reduced to 80,000 within the walls, partly by a series of calamities, such as the Mahratta wars, inundations, and a fire, which destroyed over 9,000 houses, but chiefly through the competition of Bombay, which had become the capital of the British possessions in Western India. At present it is gradually reviving, and from the central group of buildings surrounding the citadel new quarters have spread out on one side in the direction of the city of *Rander*, on the other towards the British cantonments. The old industry of gold and silver silk embroidery has acquired fresh activity, while the introduction of steam has stimulated the development of spinning-mills and other factories supplied by the cotton now extensively cultivated in the Konkans. Here are especially prepared the langutis, or loin-cloths, forwarded to the Siamese states. Relations have been established by the local Parsi bankers and Hindu baniahs with the money-markets of the whole world. But, like Bharuch, Surat has lost its maritime trade, and its port of *Suwali* has sunk to the position of a village frequented only by some small coasters. France still retains at Surat a little factory, where she enjoys all the privileges of sovereignty.*

On the route running southwards to Bombay follow *Nosari*, largely peopled by industrious Parsis, and *Bulsar*, a manufacturing place with a small seaport. West of the railway lies the Portuguese town of *Damão*, or *Daman*, at the mouth of the river Daman, accessible to vessels of over 300 tons. The dockyards of this place formerly turned out excellent ships built of teak, but this industry has disappeared, while the opium trade has been monopolised by the English Government. On the other hand, the insolvent debtors and bankrupt traders of Bombay take refuge here from their creditors. The Portuguese territory of Daman comprises in two enclaves altogether some forty villages. *Bassani*, which also belonged to the Portuguese since the year 1534, was seized by the Mahrattas in the eighteenth century. Of this "City of the Nobles," which stood on an isolated headland north of the strait of Ghora-Bunder, nothing now remains except a few ruins of palaces, churches, monasteries, ramparts, and the tomb of Albuquerque.

Bombay, commercial heir of all the Mohammedan and Portuguese cities in Gujarat and the Konkans, stands not on the mainland, but at the southern extremity of a small archipelago, which shelters its spacious harbour from the western gales. Hence the derivation of its name from Bõa bahia, or, "Good haven," seemed simple enough. But the Portuguese themselves at first called it *Monbaim*, or *Bombaim*, a term applied also to the whole district, and obviously derived from the Goddess Mumba, tutelar deity of the land. The narrow island about ten miles long, now occupied by the largest city in Southern Asia, and next to London the largest in the British Empire, has undergone frequent modifications of form. It

* Maritime trade of Surat in 1801, £1,024,000; in 1874, £274,000.

BO

75° E. of P.
20'
10'
19°
50'
40'
73° E
I. Dharavi
Mallar
Tanna
Artificial Lake of Vehar
I. S
Kurla
Bandora
Ft. Siwa
Ft. Mahim
Mahim
Trombay
Parel
I. Bombay
I. Tromb
I. Elephanta
Mazagon
BOMBAY
Girgaon
Sonapur
Malabar Pt.
I. Culaba
0 to 16 feet
16 to 32 feet
1 :
0

AY

t

00

64 & upwards

Exposed during Spring-tides.

12 Miles

consists of two parallel ridges of basalt rocks running north and south, and connected by sand mounds which enclose an argillaceous plain. Formerly the tides frequently penetrated between the basalt ranges, dividing them into secondary islands. During the floods the river Gopar, flowing north of the island of Salsette, has even occasionally sent down a sufficient volume to fill up the channel with its alluvia, and discharge its waters into the bay on the south side of the island. Now the hand of man has intervened to give a more definite if less graceful form to these fluctuating shores. Embankments covered with houses or dockyards have taken the place of the shallows; Bombay has been connected by causeways with Salsette, Salsette with the mainland, and the archipelago has thus become a peninsula.

The history of Bombay begins with the cession of the island to England in 1661. King John IV. of Portugal presented it to Charles II. as the dowry of his daughter Catherine, and Charles made it over to the East India Company for a nominal rent of £10 a year. To people the town it was made a place of refuge, and fugitives immediately flocked to it from all quarters. Thus, twelve years after the arrival of the English, Bombay is said to have had a population of 60,000. Nevertheless it could not acquire a commanding position so long as the neighbouring islands belonged to Portugal, and while the coast highway continued to be controlled by powerful native rulers. Hence it did not become for Europeans the true threshold of India till the fall of the Mahratta dynasty, and the annexation of their territory to the domain of the Company. Even before the year 1830 a highway, winding up to the Bhor Ghat, had already placed the trade of the plateaux in the hands of the Bombay merchants; in 1838 a regular postal service was established with London by the Isthmus of Suez route; then followed the lines of steamers between England and the Konkans, and the opening in 1853 of the section from Bombay to Thana of the first link in the vast network of railways, which is gradually embracing the whole peninsula in its meshes. Lastly, by the cutting of the Suez Canal, Bombay has acquired direct water communication with Europe, and superb lines of steamers, with two submarine cables, are amongst the ties which bind her Eastern Empire to England.

The period of the American civil war from 1860 to 1865 was for Bombay an epoch of prodigious prosperity. Traders flocked from all parts to share in the profits which were then being realised; the surrounding lands became a vast cotton plantation; the raw material and other produce poured in a ceaseless stream into the port, and overflowed its now too narrow quays. Fresh quarters sprang up as if by enchantment; no speculation seemed too daring; the city began to enter into rivalry with London itself, when peace was suddenly restored to North America. Then came the inevitable collapse, when all business seemed for a moment paralysed. But after the supreme crisis and ensuing prostration, a healthier tone began to prevail; the great city soon revived, opened up new avenues of trade, enlarged its quays, built graving-docks, drained the surrounding marshes, studded the neighbouring heights with country seats. And now it is proposed to raise the level of the *Flats*, stretching to the north-west, and to convert a portion of this

tract into an industrial town, while reserving the rest for one of the finest promenades in India. Thus would be swept away all the remaining hotbeds of fever, which had long earned for Bombay a sufficiently justified reputation for insalubrity. According to the traveller Fryer, five-sixths of the Europeans settled in the country perished of disease during the seventeenth century, and new arrivals were met with the far from encouraging local saying that "two monsoons made the life of a man." At present Bombay is one of the healthiest cities in India, and in this respect takes a high place amongst the cities which publish regular tables of mortality. Although situated on a small island, it is supplied with an abundance of pure water from the Gopar River, which has been bodily turned into Lake Vehar, a reservoir 1,400 acres in extent. The stream is carried by an aqueduct across the channel, to a series of tanks at different levels, whose colonnaded galleries communicate with each other by monumental flights of steps.

Seen from the inner port, east of the peninsula, Bombay presents a superb panorama. After passing the reefs and long promontory of Kolaba, and skirting the citadel, which is now chiefly occupied by public offices and counting-houses, the shipping reaches its moorings in front of the modern city. Towards the south the English quarter develops along the vast esplanade a series of rich façades, which if less ambitious are more imposing than the palatial structures of Calcutta. Yet these lofty buildings, often clumsy imitations of the "Venetian" or "Lombard" styles, scarcely harmonise with the surrounding vegetation. They are certainly less picturesque than the Hindu dwellings with their carved wooden pillars, painted balconies, and pitched roofs. The main thoroughfares are crowded with traffic and vehicles of every sort, while all the races of the Old World are represented in the motley throng—Hindus, seamen of every nationality. Europeans, negroes, half-castes, some dark, others bronze, yellow or fair, some magnificently robed, others with bare limbs, or clothed only with the simple languti.

As a commercial city, Bombay has few rivals in Asia. The annual exchanges already exceed £40,000,000, and Manchester alone takes from the district raw cotton to the yearly value of about £10,000,000, or one-third of the quantity exported during the American war. Bombay has recently become a great corn market, and in 1881 forwarded to Europe no less than 467,000 tons of wheat. It is also one of the chief entrepôts of the opium exported to China, of which one of its houses almost enjoys a monopoly. The exports are paid for chiefly in cotton goods, although a large balance has to be met by England with specie and ingots, which are circulated throughout the whole of the peninsula. The shipping is exceeded by that of London, Liverpool, Antwerp, and Marseilles, but it is slightly greater than that of Calcutta. Of the numerous local industries, the chief are dyeing, copperware, chintzes, and cotton thread. In 1877 upwards of 30,000 tons of the raw material were worked up in about thirty spinning-mills, employing a million spindles and 8,000 looms, although the first factory was not opened till the year 1863. Bombay has even acquired some importance as an agricultural centre,

BOMBAY—STREET VIEW IN THE NATIVE TOWN.

thanks to its paddy-fields, gardens, and coco-nut plantations. Numerous hands are also engaged in the fabrication of palm-wine and other liquors derived from the same source.

Being almost exclusively a commercial city, with a smaller European element than Calcutta, or even Madras, Bombay is not so well supplied with scientific institutions as the imperial capital. The Geographic Society, founded in 1841, has ceased to exist, but the still older Asiatic Society still continues to issue its valuable memoirs. Here is also the chief meteorological observatory in the peninsula, admirably situated for the study of the phenomena of the monsoons. Like Calcutta, Bombay has its parks and promenades; but its most remarkable zoological collection is found in the hospital for animals, where old or infirm oxen, monkeys, cats, dogs, birds, and even snakes, are maintained "by voluntary contributions."

Like all the large cities of British India, Bombay is supplemented by a number of secondary towns, serving as country retreats for its residents. Of these the most frequented is the health-resort of *Matheran*, which lies at an altitude of nearly 2,500 feet on a crest completely separated from the Ghats by the valley of the river Ulas. Numerous suburban residences are dotted over the slopes of this isolated mass, whose forests were still roamed by some savage tribes so recently as the middle of this century. In less than four hours the citizens of Bombay are able to reach the summit of this hill, which commands a splendid prospect of the great city, bathed at times in the glowing rays of the setting sun. A favourite retreat for merchants and officials is also the town of *Thana*, capital of the district of like name, and of Salsette, or Shasti. It lies on the east side of this island nearly opposite the mouth of the Ulas, and is connected with Bombay by rail and water. At the neighbouring town of *Kanheri* are some limestone grottoes, with carved rock temples dating from the beginning of the new era, and formerly much venerated by the Buddhists. More recent sanctuaries in this district no longer show any trace of the Buddhist cult, and are exclusively decorated with Brahmanical symbols. Near Thana are some hot springs, which bubble up from the rocky bed of a small stream.

Other sacred grottoes, which, owing to their proximity to Bombay, are more frequently visited than those of Kanheri, are the caves of *Garapuri*, "City of Caverns," in the islet of Elephanta, or Deva Levi, "Isle of the Gods," lying in the harbour east of Bombay. The island takes its name from a group of debased sculptures representing an elephant attacked by a tiger. The hill is pierced by four grottoes, whose entrance is shaded above by brushwood and twining plants. At the extremity of the chief sanctuary stands the colossal figure of Siva, under his three symbolic forms of Creator, Preserver, and Destroyer, as he is also represented in the other underground temples. The Hindus of Bombay, and especially the Baniahs, still resort at stated periods to these shrines for religious purposes. The caves of Elephanta date probably from the tenth, possibly even from the eighth or ninth century of the vulgar era, and their monstrous sculptures, however interesting to the student of theogonies, are mostly of a very repulsive character. But a profound impression is produced by the contrast between the bright aspect of

nature outside and the solemn gloom of these crypts with their massive columns bending beneath the weight of their rocky roofs. One of the temples has already completely yielded to the pressure. It is noteworthy that these subterranean sanctuaries are crowded together more thickly in the Bombay district, at the foot of the Ghats and on the neighbouring plateau, than in any other part of the peninsula. Beyond the north-west angle of the Ghats, monuments of this description, whether Buddhist or Brahmanical, become less numerous as we proceed eastwards.

Kalyan, the ancient capital of the Konkans, and already famous many centuries before the name of Bombay had been heard of, is now nothing more than a small

Fig. 120.—Underground Temples in India.

Scale 1 : 17,000,000.

300 Miles.

seaport, to which a few light craft gain access through the winding channel of the Ulas. But it has recently acquired some importance from its position at the junction of the two main lines of railway from Calcutta and Madras. The surrounding plains are strewn with ruins, including the remarkable temple of Ambernath, of which little now remains except the entrance and lower walls, all covered with marvellously delicate carvings.

South of Bombay the population, consisting mainly of fishers, with the descendants of the old piratical element, is concentrated chiefly on the seaboard. The houses of the towns and villages are here interspersed amid the coco-nut groves fringing the coast. *Alibagh*, an old nest of corsairs, is familiar to seafarers from

the neighbouring island of Kolaba, where the wreckers formerly plied their infamous trade. Alibagh was said to have been entirely built of the timber from vessels stranded on these inhospitable shores. *Janjira*, the *Jezireh*, or "Island," of the Arabs, was the rallying-point of the powerful maritime populations, which at one time recognised the jurisdiction of the "Abyssinian Princes." In this part of the Konkan region there still also survives a small community of "Beni Israel," or Israelites, settled here from time immemorial. The small state, with a population of about 70,000, to which Janjira has given its name, and whose capital is the neighbouring town of *Rajpuri*, bears also the designation of Habsan, or "Abyssinia." In the hands of the English, Janjira might become one of the most sheltered ports on the dangerous Konkan coast. There is no bar, and even at low water there is a depth of over 20 feet in the harbour. More important than Alibagh, as trading-places, are *Baukot*, on the broad estuary of the river Savitri, and *Ratnagiri*, on a somewhat exposed creek. Ratnagiri has also a considerable fishing industry, employing hundreds of native craft. Here are annually shipped thousands of coolies for Mauritius and Réunion, and porters for Bombay. Some trade is also carried on by *Viziadrug*, and *Deoghar*, but of all the ports between Bombay and Goa, the most frequented is *Vingorla*, also at one time a hotbed of piracy.

A native town, bearing the name of *Goa*, stood formerly on a marshy island in the river Juari, but no trace of its palaces can now be discovered amidst the jungle. Yet it was a rich and flourishing place, the glory of whose rulers is recorded in ancient inscriptions. In 1473 its Mohammedan spoilers removed its site to the south side of the Mandavi estuary. Here stood the new town, which was seized in 1510 by the small army of Albuquerque, and which soon became the "Queen of the East and the pride of the children of Lusus" (Camoens). At the end of the sixteenth century its wealthy traders had already earned for it the title of *Goa dourada* ("Goa the Golden)," and according to a local Portuguese proverb, "who has seen Goa has no need to see Lisbon." But the attacks of the Dutch, followed by the Mohammedans and Mahrattas, and especially the proselytising zeal of its priests, had the result of gradually depopulating the place. On his second voyage, Vasco de Gama was accompanied by eight Franciscan friars, eight chaplains, and one "chaplain-major," who were to preach the faith, and if necessary resort to the sword. But "the best of the Gentiles fled to other lands, and naught remained but the scum."* Then the neglected channel of the river silted up, the abandoned fields were overgrown with a rank vegetation, after the floods the water settled in stagnant pools and swamps, and the citizens were driven elsewhere by the malaria. In the middle of the eighteenth century Goa was a city of the dead, and even now it is little more than a forest of coco palms, in the midst of which stand numerous ruins, the towers and domes of some thirty religious edifices. The Palace of the Inquisition, where resided the true masters of the land, is now a pile of rubbish; but the cathedral, metropolitan church of the Indies, as well as an old mosque transformed to a Franciscan convent, are still standing. In the sumptuous church of the Bom Jesus is shown the gorgeous tomb in jasper, marble, and silver, which

* Letter written in 1584 by Sarsetti, and quoted by Vasconcellos-Abreu in his "Glottologia arica."

contains the remains of Francis Xavier, Apostle of the Indies. The body of the saint was officially proclaimed "Viceroy of India and Lieutenant-General," and from him the actual governor was supposed to derive all his authority. So recently as the beginning of the nineteenth century he still went in great state to the Bom Jesus to receive his investiture before taking possession of the administration. In the heyday of its splendour the *Velha Cidade*, or "Old City," had a population of 200,000; and now about 100 persons linger amid its ruins, here retained for the service of its churches.

The *Nova Cidade* of Goa, better known under the name of *Panjim,* was chosen in 1756 as the residence of the Portuguese viceroys, but it did not receive its

Fig. 121.—Territory of Goa.

Scale 1 : 800,000.

12 Miles.

official title of capital till the year 1843. Lying on the south side of the estuary, 5 miles west of the old town, it is accessible to large vessels between September and May, but during the prevalence of the south-west monsoon the approach is very dangerous. A better site would have been the southern bay, which is sheltered by the Marmagão headland, and which affords safe anchorage throughout the year. Yet, in spite of its dangerous bar, Panjim has a considerable export trade in coconut oil, coprah, fruits, timber, and salt. But this trade must eventually be transferred to the port of *Marmagão,* which is soon to be connected with the railway system of the Dekkan, and which is probably destined to become the new capital. At present the largest town in the Portuguese possessions is not Panjim, but *Margão,* which lies in the southern part of the territory, in the centre of the low-

lying tract confined between the sea and the estuary of the river Rachol. Another important town is *Mapuça*, or *Mopusa*, in the Bardes district, to the north of Panjim.

The Portuguese possessions have at present a total population of 400,000. In the towns many claim European descent, but all are half-castes, except the recent arrivals from Portugal. The "Whites." of Goa are a mixed race, with low forehead, small restless eyes, thick lips, narrow chest, and slim legs. They form a special class known as Topas, distinct both from the natives and from the full-blood Europeans. Many seek employment as clerks or writers in the public offices and commercial houses of the large English towns.

Two-thirds of the Hindu population consist of Roman Catholics, showing every shade of ethnical and social transition to the half-caste Christians. The Portuguese possessions are the only part of the peninsula where the majority of the people claim to be Christians—a fact due to the direct action of the secular power during the administration of the viceroys and the Inquisition. Towards the beginning of the eighteenth century as many as 30,000 Europeans, half-caste, and native priests and monks were grouped in the monasteries and round about the churches. At present religious liberty is fully established, and several thousand Mohammedans are amongst the most respected citizens of Panjim and the other towns of the territory.

South of the Portuguese frontier lies the port of *Karwar*, which is one of the very best on this coast, and which is probably destined to divert a portion of the vast trade now monopolised by Bombay. But the railway intended to connect it with Madras, through a gap in the Ghats, has not yet been begun. Of the other ports on the north *Kanara* coast, the only rival of Karwar is *Kumpta*. All the rest, such as *Ankola*, *Gangawali*, and *Honawar* (*Honor*), are frequented only by a few small coasters. Near the last mentioned a mountain torrent falls at a single leap of 920 feet from a rocky precipice in the Ghats. During the south-west monsoons this cataract of Gerusap, or Gairsoppa, presents one of the grandest sights in the whole peninsula.

CHAPTER XIV.

GODAVERI AND KISTNA BASINS.—THE DEKKAN.

IN the Dekkan more territory has been left to the native rulers than elsewhere in India. But in pursuing this policy the English have been careful to isolate the feudatory states, cutting them off from all communication with the seaboard, and occupying all the strategic positions of this region. On many occasions the paramount power has thus been able to sequester diverse provinces of these "independent" principalities, merely by shifting the garrisons of a few strongholds. In this way, Berar, under the name of the "Assigned Districts of Haidarabad," has been detached from the Nizam's territory, and placed under the direct administration of an English commissioner.

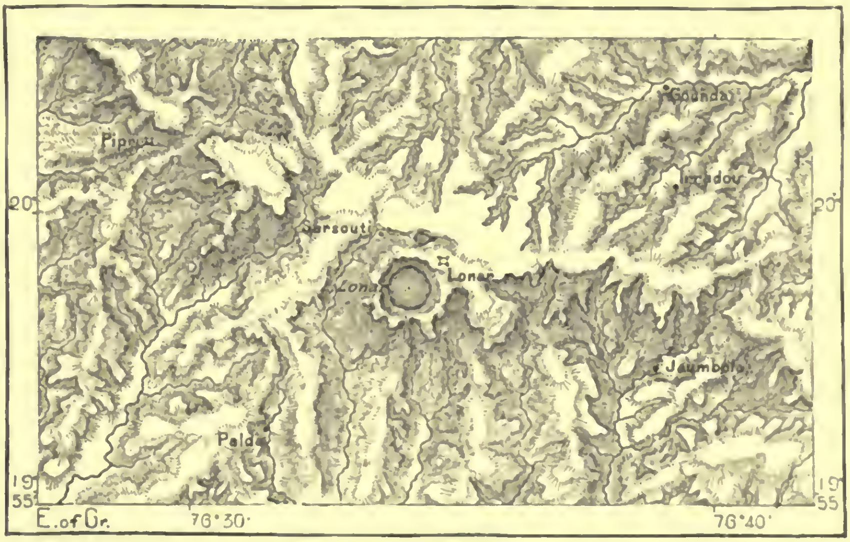
Relatively to their size, the two basins of the Godaveri and Kistna are much less densely peopled than the rest of the peninsula. The coast districts under British rule and the river valleys for a great distance inland have all a considerable population. But on the plateaux settlements are thinly scattered, except near the main highways and along the foot of the Western Ghats, where numerous towns have been developed by the facilities for intercourse with the neighbouring coast, and by the resources of the well-watered upland valleys. Taken as a whole, the region of the Dekkan forms a plain sloping from west to east, and discharging its waters into the Bay of Bengal. Although the former is a scene of violent igneous eruptions, and throughout half of its extent entirely covered with lavas, it presents a more uniform aspect than most regions in the peninsula. All the north-western section, bounded south-east by an irregular line stretching from Goa to the Nagpur basin, is overlaid with basaltic traps, which form a continuation of the same formations in the Central Provinces and on the Malwa plateau. For an uninterrupted space of over 120,000 square miles these igneous rocks overlie all the other geological strata, and throughout its entire length of 500 miles, the railway from Bombay to Nagpur traverses nothing but traps and the ashes thrown up by long extinct volcanoes.

The Dekkan develops a succession of long, gently undulating plains, with intervening ridges, whose summits form perfectly regular tables, flanked by

terraces, which are furrowed at intervals by deep ravines. These terraces, consisting of basalt masses more durable than the lower trap, have been subject to little weathering. Here and there the plains are crossed by rocky lava walls, which have resisted the erosive action of water, and which still attest the extent of former underground disturbances. These basalt walls occur chiefly in the north-west angle of the Dekkan, in the neighbourhood of Puna and Nasik, and on the slopes of the Bombay Ghats. Here also the layers of ashes, doubtless discharged by the craters discovered by Clark in the Konkan lowlands, are thicker and more frequently met than elsewhere in the volcanic region. This was evidently the centre of the plutonic action, and here were erupted the streams over 500 yards thick, which now cover one half of the plateau slightly inclined towards the Bay of Bengal. But on the plateau itself not a single volcano has been discovered.

Fig. 122.—Lake Lonar.

Scale 1 : 250,000.



6 Miles.

The depression now filled by Lake Lonar (Lunar) seems, however, to be the result of an igneous explosion.

The slight incline presented by these streams can be explained only by the extreme fluidity of the lavas when discharged. Some geologists have supposed that the apparent horizontal position of the traps arises from their diffusion under the pressure of marine waters. But no marine fossils have been anywhere found, except in a solitary layer of tufa on the edge of the igneous plateau at the mouth of the Godaveri. The animal and vegetable remains elsewhere collected belong to land and freshwater species. It was during the chalk and following eocene period that this enormous quantity of molten matter was discharged, a quantity which a river such as the Amazons would have required a hundred years to distribute.

The surface lavas of the Dekkan are known to have been decomposed in layers

of laterite, and this formation has been carried by running waters far beyond the volcanic streams, and spread over the gneiss of Southern India. These tracts of grey or reddish earth, in which the water disappears as through a sieve, are generally far from fertile. Their vegetation can nowhere be compared with that of the Konkans or Bengal, except in the depressions where the black humus has been collected. Far from the rivers the plateau is destitute of forests, and most of the woody plants, whether trees or shrubs, belong to the caduceous order. In winter this part of India is grey or yellowish, like the plains of temperate Europe. At the beginning of the heats, and before the rains set in, everything seems parched up, and a single spark suffices to fire the tall grasses and wrap the hillside in a mantle of flame. These upland plains are all the more difficult to cultivate that the rivers flow mostly in deep beds, rendering the process of irrigation very costly. They are also either dry or greatly reduced in volume during the north-east monsoon, when water is most needed. But fertile tracts known as Karnata, or "Black Lands," are found in the western region, where there is a more copious rainfall, and where the streams flow in shallower beds.

The Godaveri River.

The Godaveri is the largest river in the Dekkan. Its length is estimated at about 850 miles, while its basin covers an area of 120,000 square miles, an extent equal to that of the whole of Great Britain and Ireland. It rises in the north-west angle of the plateau, near the village of Trimbak, within 50 miles of the Arabian Sea. Regarded as an underground branch of the Ganges by the devout Hindus, who come to bathe in its waters, the Godaveri, called also the Purri-ganga and Vriddha-ganga, after filling a deep reservoir, receives the streams from the Ghats, and flows east and south-east parallel with the Tapti, but in the inverse direction. Near the middle of its course it is joined by the Pranhita, by which its volume is more than doubled. But as in so many other basins the united stream does not take the name of the larger affluent, and here as elsewhere this is due to the greater historic importance of the valley, whose name has prevailed. Thanks to the contributions of the Pain-ganga, Wardha, Wain-ganga, and other streams from the Nagpur basin, the Pranhita is the more copious river; but the Godaveri indicates the route followed by the Hindu immigrants, after they had penetrated to the plateau through the defiles south of the Tapti. The Aryans established themselves first in this part of the Dekkan, which they may have reached even before arriving in the Ganges basin.

Below the confluence the united stream enters a hilly region, which it traverses through an alternating series of plains and gorges. After receiving the Indravati, famous for its magnificent cascade 100 feet high, and lower down the Tal and Sabari, the Godaveri pierces the last chain of the Eastern Ghats through a defile scarcely more than 800 feet broad at its narrowest point. But here it has a depth of 120 feet, and during the floods rises 100 feet above its mean level. It is said in 1848 to have even reached a break in the hills 200 feet high, through which it

overflowed into the basin of the Yarakalwa. On emerging from the gorges, the Godaveri broadens out in an island-studded bed, and below Rajmahendri ramifies into two branches, which sweep gracefully round the plains of the delta and a few hills, which at one time were islands surrounded by the sea. A branch, of which the traces alone survive, flowed formerly to the north of the Rajmahendri cliffs, and entered the sea north of Samalkotta.

The southern branch, which is still known by the Buddhist name of Gautami, is regarded as the most venerated of all. Here every twelve years is celebrated with great pomp the Push-karam, which attracts countless pilgrims from every part of India. Like the Maha Naddi, Kistna, Caveri, and all other large streams of the east coast, the Godaveri has deposited its alluvia in a vast semicircle beyond the normal coast-line, the encroachments of the mainland on the sea covering a space of at least 1,600 square miles. At the northern extremity of the delta proper, erratic watercourses, swamps, lines of dunes and roadways, mark the beaches that have been successively formed in this direction. At the same time the fresh lands thus developed by the Godaveri have enclosed numerous plains still imperfectly drained. The coast-line of the delta is thus fringed by extensive lagoons, which are flooded during high tides or stormy weather. Even the large lake Kolar (Koleru, Klugu), between the Godaveri and Kistna, is probably an old inlet now separated from the sea by the alluvia of the neighbouring rivers. In fact it is rather a marsh than a lake, and during the dry season more than half of its surface is nothing more than a quagmire. In the rainy months it becomes a sheet of water about 100 square miles in extent, and studded with islands which have been consolidated with much labour by the peasants, and which are gradually increasing in size by the fresh alluvia. Yet the bed of the Kolar would seem to have subsided, at least if it be true that the remains of engulfed villages are visible in the deeper parts of the lake. From time immemorial the riverain population were accustomed during the annual floods to open the seaward emissary, in order to let off the superfluous fresh water, after which the embankment was restored to prevent the entrance of the salt water. At present the level of the lake is regulated by a sluice, and the surrounding fields are watered by canals derived from the Godaveri.

Being subject to the same climatic conditions as the Maha Naddi, the Godaveri presents analogous vicissitudes in its discharge. During the floods it sends down 1,000,000 cubic feet per second, while its volume is reduced to 1,500 in the dry season. Like the riverain tracts along the Maha Naddi, those of the Godaveri are thus exposed to alternate inundations and droughts. Nevertheless disasters are here less frequent, owing to the less extent and greater incline of the delta, rendering the drainage and irrigation at once more easy. Great works have been carried out to regulate the discharge. In the low-lying tracts both sides have been embanked, and near the village of Daoleshvaram, at the head of the delta, a transverse dam, nearly 5,000 yards long, 13 feet high, and 130 feet broad, at the base, serves to raise the level of the waters and distribute them over a network of canals navigable throughout nearly their whole length of 500 miles. An annual

movement of over fifty thousand boats takes place on the delta and the channel connecting it with the Kistna. Above the bar the Godaveri is also navigable, at least during the four months of high water, but for the rest of the year it is available only for floating down lumber. The canals undertaken to establish permanent communication through the Godaveri, Pranhita, and Wardha, as far as Hinganghat, have had to be abandoned, and the trade with this great cotton mart of the Central Provinces is now carried on by the railway. Hence, instead of being

Fig. 123.—Mouths of the Godaveri.

Scale 1 : 750,000.

sent down by water to Coconada, the port of the Lower Godaveri, the raw cotton is now forwarded by land to Bombay.

The Kistna River.

North of the delta all the streams are mere torrents flowing from the Eastern Ghats. But some 60 miles farther south the Godaveri is almost rivalled in

size by another river, which develops a crescent-shaped delta contiguous to that of the northern stream. The Kistna, or Krishna, like the Godaveri and Caveri, traverses nearly the entire length of the peninsula, for it rises close to Mahabaleshvar near an eminence within 40 miles of the Arabian Sea. Although less venerated than the other rivers of the Dekkan, the Kistna is still regarded as a sacred stream, whose source is guarded by a temple of Mahadeo. Its upper course flows south-east along the Ghats, after which it runs mainly east through narrow, abruptly-winding valleys. Its course is here much obstructed by rapids, and on entering the territory of Haidarabad it is precipitated in a space of 3 miles over a series of cataracts with a total fall of 400 feet. Below the falls it is joined by the Bhima from the northern Ghats, and farther on by the Tunga-bhadra, which is formed by two rivers of this name rising in the forests of Kanara and Mysore. Below these affluents the Kistna receives no more large tributaries, and after piercing the Eastern Ghats reaches the coast through a constantly increasing delta. Although narrower than that of the Godaveri, this delta advances farther seawards, and is deflected southwards by the long ridge developed by the alluvia of the northern river.

The Kistna is almost useless for navigable purposes. Throughout its whole course the only craft met on its waters are the ferry-boats made of bamboo and covered with skins. Flowing in too confined a bed, it is also of little value for irrigation. But the reservoirs of the Upper Bhima serve to supply the city of Puna, and canals have been dug in the valley of the Tunga-bhadra. At the head of the delta a dam, like those of the Maha Naddi and Godaveri, regulates the discharge and distributes the overflow into the surrounding irrigation canals, which have a total length of over 240 miles, and fertilise a tract of some 230,000 acres.* This is the only part of the Kistna basin where the stream is systematically applied to the improvement of the land. But however useless its middle and upper course may be to the riverain populations, it has played a great part in directing the stream of migration across the peninsula. In Southern India the Kistna is regarded as forming a parting-line between the two great divisions of the land, and near the Ghats it separates the Aryan and Dravidian linguistic zones. Various differences in the habits and usages of the populations dwelling north and south of the Kistna indicate their separate origin. In the north the village huts have thatch roofs, while in the south they terminate with terraces of beaten clay.

INHABITANTS.—THE MAHRATTAS.

On the uniform plateau of the Dekkan, destitute as it is of extensive forests and highlands which might afford a refuge to savage populations, nearly all the people, whatever their origin, belong to the cultured races of India. Nevertheless a few Bhil tribes and Danghar shepherds, speaking a distinct language, still occupy the hills in the north-west overlooking the plain of Aurangabad. Some Khonds

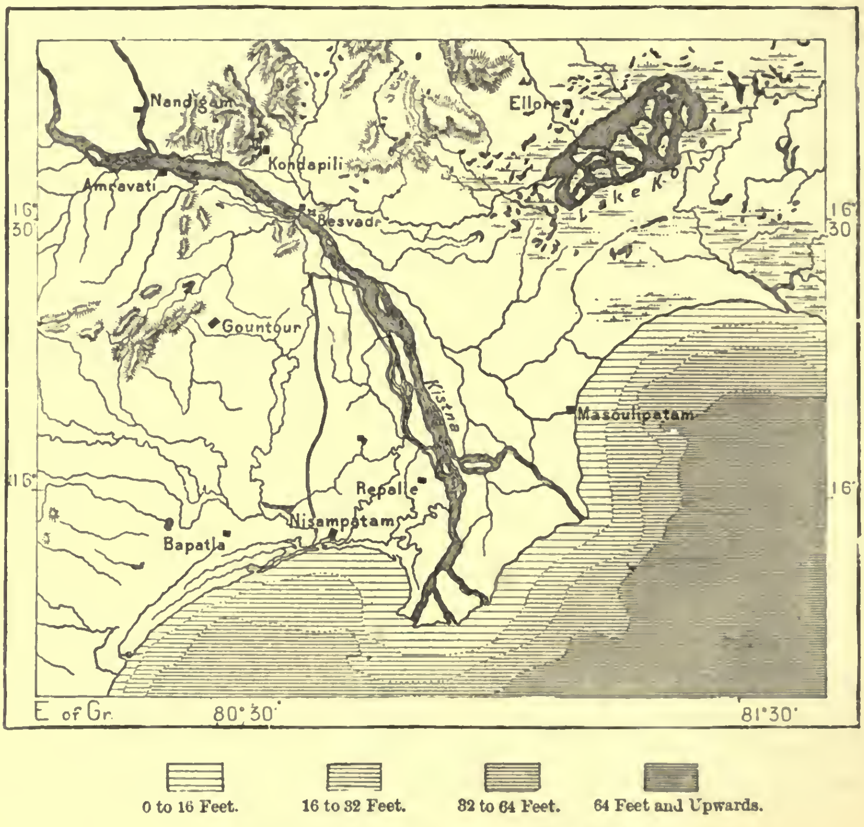
* Length of the Kistna, 760 miles; area of its basin, 100.000 square miles; discharge during the floods, 840,000 cubic feet per second; discharge at low water, 800 cubic feet per second.

also roam the forests of the Eastern Ghats in the Jaipur and Bastar districts north of the Godaveri.

The Hindu Mahrattas, who occupy the whole of the north-western division of the Dekkan, and whose southern and eastern limits nearly coincide with those of the lava formations, are the only Aryans who have developed a compact nationality on the plateaux of Southern India. Their immigration dates probably from a very remote period, for their system of castes differs greatly from that of the northern Hindus. The Mahratta Brahmans are generally of a very light complexion, with slightly aquiline nose, and amongst them grey eyes are by no means rare.

Fig. 124.—Mouths of the Kistna.

Scale 1 : 1,500,000.



Arriving probably from the north-west, the Mahrattas drove the Bhil populations into the surrounding highlands, and then advanced gradually southwards along the eastern slope of the Ghats to the region watered by the head streams of the Kistna and Godaveri.

Formerly despised by the Mussulman rulers, who called them "Mountain Rats," the Mahrattas had acquired no historic fame till about the middle of the seventeenth century. But about this time they were already strong enough to check the Mohammedan power, and under the invincible Sivaji they succeeded in founding the

most formidable state in the peninsula. Alternately peasants and warriors, they rapidly came together, and as rapidly dispersed, mounted on their wiry, active, and daring little horses. In a single day they were met 60 miles from their trysting-place, suddenly swooping down on hostile districts, plundering towns, carrying off

Fig. 125.—Mahratta Territory.
Scale 1 : 5,500,000.

120 Miles.

captives, and then retiring to their mountain fastnesses or to their respective villages, protected by the terror of their name. The neighbouring fertile zone of the Konkans supplied them with abundant resources in their retreats on the rocky scarp of the Western Ghats. They penetrated even to the Ganges Valley, and in

1742 sacked Murshadabad, capital of the delta. Here are still shown the remains of the "Mahratta Ditch," formed round Calcutta to protect it from these formidable marauders.

Acquiring a preponderating influence at the decadence of the Moghul Empire, the Mahratta power was unable to weld into a compact nationality the various native elements. Intestine strife, combined with the cruelty and rapacity of their rulers, precipitated their ruin. Unable to resist the English in the open field, they successively lost all the provinces of their vast empire, and the Mahratta princes who still reign in Rajputana, Gujarat, and the Dekkan, are indebted for their sceptre to the generosity of their conquerors. The last descendant of the Brahman ministers who had seized the Mahratta throne was a simple pensioner of the British Government, and Nana Sahib, the adopted son of this peshwa, in vain attempted to restore a native empire by the massacre or expulsion of the Western conquerors.

The Mahrattas, who number about 10,000,000 altogether, are now nothing more than an ethnical group without any real political autonomy, and distributed over various administrative divisions. Their Neo-Sanskritic language comprises several varieties, such as the Kandesi of Kandesh, the Dashkini of the Dekkan, the Goan and Konkani of the coast lands. Their literature, which is written in a base form of the Nagari character, is one of the poorest amongst those of the Aryan tongues. Beyond the Mahratta domain the whole of the Dekkan belongs to Dravidian populations speaking Kanarese, Telugu, and Tamil.

Topography.

Ganjam, first city on the so-called Circar (Sarkar) coast south of Orissa, lies near the southern extremity of Lake Chilka, with which it communicates by canals, often choked with mud, but much used by the pilgrims going by water to Jagganath. Before 1815 Ganjam, that is, the "Granary," or "Corn Depôt," was a much-frequented riverain port, and a little trade is still carried on round its crumbling palaces. But most of the inhabitants have been driven by the malaria to *Barhampur*, the new capital, which has been built on a bluff 6 miles from the coast, and which enjoys a more healthy climate. Southwards, between the stormy sea and the rugged Mount Mahendraghiri, crowned with temples dedicated to Siva, stand the "Thermopylæ" of the Circars, which have been forced by many conquering hosts advancing to the Godaveri basin, or ascending towards Bengal. Here is the common limit of the Aryan and Dravidian linguistic domains, the Sanskritic Uriya being current on the north, the Dravidian Telugu on the south side. Mahendraghiri, which is nearly 5,000 feet high, presents great advantages for the establishment of a sanatorium; but the English residents in the neighbouring towns are still too few to people such an upland town.

Kalingapatam, at the mouth of the river Vamsadhara, has preserved the name of the ancient kingdom of Kalinga, which flourished during the Buddhist epoch. Under Mohammedan rule Kalingapatam was also a large place, as is evident from

the remains of its numerous buildings. At present it is again recovering some of its former prosperity, thanks to its safe anchorage, which is the best for a distance of over 360 miles on this coast. Its exports consist of rice, sugar, and other produce, sent down from Parla-Kimedi and other towns of the interior. *Chicacole*, or *Srikakulam*, lies 15 miles south-west of Kalingapatam, not on the coast, but about 5 miles inland on the river Nagula. It is an industrial place, noted for its delicate muslins.

The largest city in the Circars, or "Governments," is *Vizagapatam* (*Visakhapatnam*), the city of Visakha, the Hindu "Mars," whose temple has been swept away by the waves. But the faithful still continue to bathe on the heap of stones which are supposed to represent its ruins. The anchorage is sheltered southwards by a headland known to mariners as the "Dolphin's Nose," and the port is accessible to vessels of 300 tons, which here take in cargoes of rice, sugar, and tobacco, drawn from the surrounding cultivated plains. The modern European quarter of *Waltair* forms a north-easterly continuation of Vizagapatam, along the beach. Here the air is much purer than in the town itself, west of which stretches a swampy tract not yet completely drained. Vizagapatam is noted in India and England for its carved ivories, caskets encrusted in silver, and other fancy objects of a costly description. About 17 miles to the north-east stands the commercial town of *Bimlipatam*, which was till recently a mere fishing village. But its good anchorage, superior to that of most seaports on this coast, has enabled it to outstrip Vizagapatam, if not in its tonnage, at least in the value of its exchanges. The trade of Bimlipatam is chiefly with France, to which it exports sugar, indigo, and oleaginous seeds.

This part of the Circars belonged to France for a few years about the middle of the eighteenth century, and the name of the inland towns of *Vizianagram* and *Bobbili* still recall the military expeditions of Bussy. In the district local ballads are still heard on the capture of Bobbili, which was seized by Bussy as the ally of the raja of Vizianagram. After killing all the women and children in the fort, the garrison attempted to cut through the French ranks, and, refusing quarter, were all put to the sword. Four alone escaped to the jungle, where they lay concealed till they found an opportunity of penetrating to the tent of the raja, whom they assassinated, thus putting an end to the hereditary quarrel between the two royal families.

In the basin of the Godaveri, properly so called, there are no towns rivalling in importance the flourishing city of *Nagpur*, which has attracted most of the trade of the Central Provinces. *Nasik*, lying in the north-west corner of the Dekkan plateau on both banks of the Godaveri near its source, commands the important Tal ghat which leads down to the Konkan lowlands. But although an ancient city, Nasik does not seem to have ever been a very large place. The sterility of the surrounding plains, which stand at a mean elevation of about 1,600 feet above the coast lands, and the proximity of the hilly districts inhabited by wild tribes, prevented this district from becoming thoroughly settled, like the more favourably situated plains of Gujarat. Nevertheless Nasik is a very busy place during the

pilgrimages, when the faithful flock in thousands to the holy waters of the Godaveri, or to the grottoes of Pandu, noted for their ancient Buddhist monasteries. Amongst its industries are paper and copper ware. Several of the surrounding railway stations have become permanent marts for the purchase and export of the cereals and cotton brought by waggons and pack oxen from Berar and the Nizam's dominions. *Deolali* is little more than a village near the cantonments to which European soldiers are sent for a few months to be acclimatised after landing at Bombay.

Aurangabad, on a small northern affluent of the Godaveri, although dating only from the beginning of the seventeenth century, is already a populous city with some remarkable monuments, including several mosques, a large reservoir, and the mausoleum of Aurengzeb's wife, noted for its exquisite marble carvings. Two miles to the north-east, in a semicircle of hills 500 feet high, are five Buddhist grottoes, whose sculptures, bas-reliefs, and columns would attract more attention were they not eclipsed by other subterranean sanctuaries in the same district containing far more precious monuments of antique art. *Daulatabad*, 8 miles to the north-west, is commanded by a citadel of formidable appearance, which in 1338 became the capital of a Mohammedan empire. But the attempt of Mohammed Shah Tughlak to remove the inhabitants of Delhi to this place ended in failure. On the route to Ellora stands the tomb of the Emperor Aurengzeb, a plain marble structure.

The underground temples of *Ellora* (*Eluru, Verul*) stretch in succession north and south for a distance of about 4,000 yards. They are excavated on the west face of a plateau of tufa formation, terminating in a steep cliff, here and there furrowed by ravines and flanked by isolated mounds. To execute such works needed as many hands as were employed upon the pyramids of Egypt. The series of crypts is so extensive that it would require several days to thoroughly inspect them. In 1877 wild boars and panthers had their lairs in some of these wonderful temples. Most visitors remain satisfied with a general survey of the façades, penetrating only into the more noteworthy caves. Those to the south are the oldest, dating from Buddhist times. These are succeeded in the centre by the temples of the Brahmans, which are followed on the north by the more recent Jaina sanctuaries. Thus is completed a series of from thirty to forty underground buildings, exclusive of the minor excavations. The least ornamented chambers are those of the Buddhists, whose precepts inculcated contempt for mundane vanities. The Brahmans, on the contrary, delighted to lavish on their subterranean shrines the splendour of the pagodas standing on conspicuous sites in their cities. Amongst these Brahmanical monuments is the temple of Kailas, which excels all others in its fine proportions, originality and unity of style, and rich sculptures. Yet this architectural marvel is a mere nave cut in the live rock, which has here been entirely detached, so as to leave the building encased, as it were, in a framework of vertical stone walls. The Kailas is the northernmost of all the Dravidian temples in India. The vast monolith, 250 feet long, 150 broad, and 100 high, is supported by a row of elephants, lions, and symbolic animals, grouped in divers attitudes. All the pillars of the vast chamber are carved in different ways, sculptured balconies adorn the side porches, while the main entrance is surmounted

by pavilions. Although the temple is dedicated to Siva under the form of *trimurti*, Vishnu and other Brahmanical deities are also represented. A few remains of frescoes are still visible on the vaults, and the walls are covered with sculptures.

The *Ajanta*, or *Indhyandri* Hills, which separate the Dekkan plateau from the Tapti Valley, contain other caves scarcely less famous than those of Ellora, but far less visited, owing to their remoteness from large towns, and the real danger to

Fig. 126.—Ellora—Palace of Kailas.

which people are exposed from bees swarming on the projecting ledges of the rock. The chambers excavated in the trap are let into the concave face of an almost vertical wall, at the foot of which flows the Waghara torrent. Facing it are other precipices, forming a ravine from which the river descends through a series of seven cascades, the last of which has a fall of 100 feet. Most of the grottoes were *viharas*, or monasteries, carved only round the porches and windows of the entrance, and in the nave containing nothing but a statue of Buddha on an altar. The cells

are simple niches cut in the rock round about this nave. Much more richly sculptured are the *shaitya*, or temples proper.

But the religious monuments of Ajanta derive their chief interest from the unique remains of paintings which are still visible on the walls and vaults. Dating from various epochs between the second century of the old and seventh of the new era, these frescoes display a certain anatomic knowledge and a true sentiment of proportion. They represent not only religious and symbolic subjects, but also scenes of civil and homely life, the chase, battles, processions, nuptial and funeral rites, labourers at their daily work, women occupied with their household duties. The whole social life of Buddhist India as it existed 2,000 years ago is thus revealed to the eyes of the spectator. Judging from these representations, the Hindus of those times possessed but few offensive and defensive weapons. The Ajanta caves form altogether a vast museum, embracing the whole history of Buddhist art, from the time when the monks took refuge in their narrow rocky cells to the epoch when, already half Brahmanised, they lavished all the resources of painting and sculpture on the decoration of their cave-temples.

The celebrated battle-field of *Asai* (Assaye), where the powerful Mahratta confederacy was broken in 1803, lies some 24 miles farther south, on the highway to *Jalna*, a large city in the Nizam's dominions now commanded by English cantonments.

Below Nasik the Godaveri, here flowing through a deep valley of erosion, is skirted by few towns, either on its banks or on the neighbouring heights. *Taka*, *Paithan*, *Patri*, *Nandar*, *Nirmal*, and *Jaunur* are all small places. But in the same basin a hill commanding the valley of the Manjera is crowned by the city of *Bidar*, which till the middle of the sixteenth century was the capital of a Mohammedan dynasty, and which is still defended by ramparts and a citadel flanked by seventy-two bastions. Its former splendour is attested by some fine buildings, and its artisans, heirs of a flourishing industry, still possess the secret for the composition of the so-called "Bidar metal," a peculiar alloy of copper, lead, tin, and zinc, used in the preparation of jewellery enriched with gold and silver.

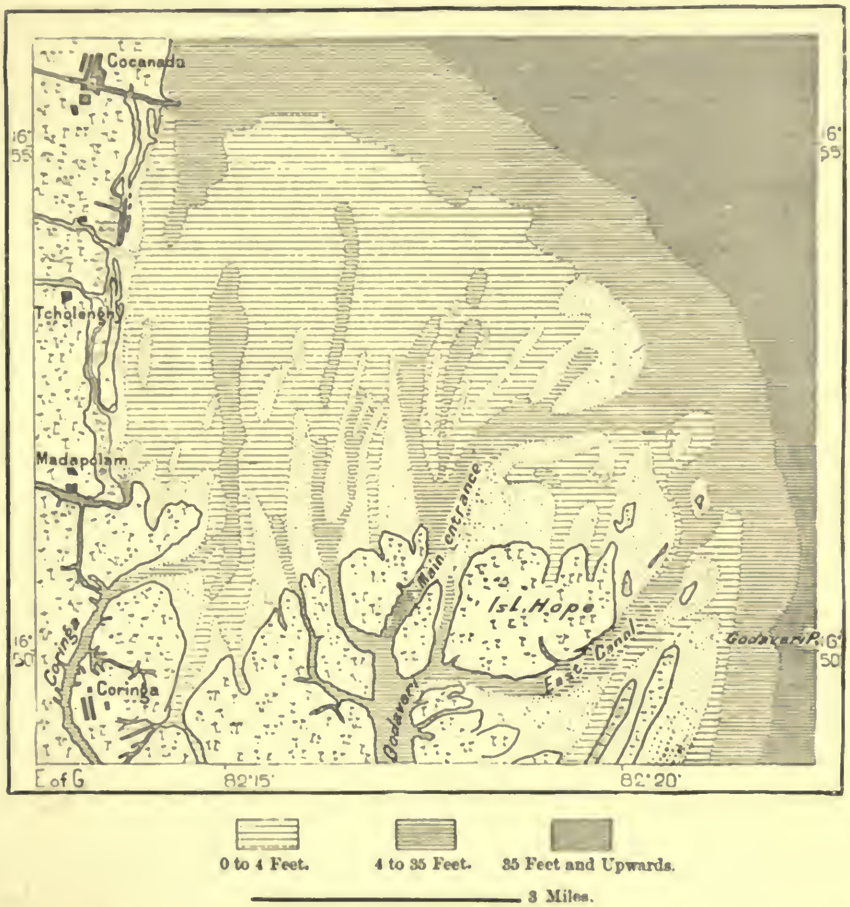
Sironcha is a mere village, notwithstanding its convenient situation on a hill 2 miles north of the Godaveri and Pranhita confluence. Farther south is *Warungul*, which was at one time capital of the Talingana dynasty, and which is still surrounded by a double enclosure and a ditch nearly 6 miles in circumference. *Jagdalpur* also, in the Indravati Valley, is now a mere collection of mud huts, although capital of the Bastar district, whence its alternative name of *New Bastar*. A more important place is *Jaipur*, another capital which has nothing to show beyond its royal palace and some fifty pagodas. No real town occurs in this region till we reach the delta, where *Rajmahendri*, former capital of a kingdom, stands on the left branch of the river above its bifurcation. Its houses, interspersed with palms and other trees, stretch for some miles along the Godaveri, which is here crossed by a steam ferry. Rajmahendri, which is commanded by a fort garrisoned with sepoys, was formerly noted for its fine muslins, and it still produces various woven goods of this sort. Many hands are also employed by a large sugar refinery

recently established in the neighbourhood, and by the sluices at the Daoleshvaram dam, 5 miles below.

Rajmahendri communicates by means of navigable canals with the ports of the delta, all of which are exposed and of difficult access. *Cocanada*, the busiest of all, lies north of the northern branch of the Godaveri, where it forms a single town with the old Dutch factory of *Jaganadpur*. It exports cottons, rice, sugar, oleaginous seeds, and its tobacco is considered the best in India. Farther south is

Fig. 127.—Cocanada and Coringa.

Scale 1 : 140,000.



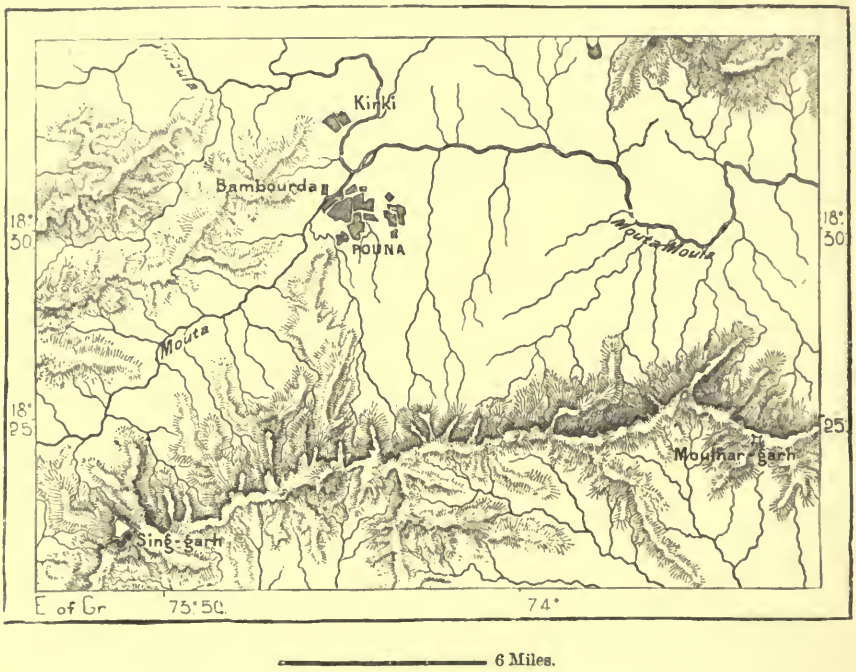
Coringa, which communicates with the Godaveri by a sluggish channel, and which while in the hands of the Dutch was the most flourishing place on this seaboard. In Burma and other countries in Farther India, the Telugu residents are still known as Coringi, from the name of this place, whence they formerly embarked for Indo-China. The trade of Coringa is still chiefly with Burma. Some shipbuilding yards line the channel connecting it with *Yanaon*, which is all that remains of the conquests made by Dupleix and Bussy in the Circars. This little French enclave, which occupies a space of 3,500 acres on the north branch of the Godaveri, with a

population of about 5,000 Hindus, has scarcely any trade, being separated from the sea by shallow and shifting channels inaccessible to large vessels. On the southern branch of the Godaveri lies *Madapolam*, another decayed place, which gives its name to a fine description of calico. In 1789 the whole district was submerged during a terrific cyclone, which destroyed many thousand inhabitants of the delta, and which drove the *Lévrier* nearly 3 miles inland to the Coringa district.

Large towns are more numerous in the Kistna than in the Godaveri basin. The Mahratta city of Puna, which commands the region about the head waters of the Bhima, is one of the great cities of India, especially from June to November, when it becomes the temporary capital of the Bombay Presidency. Some of the

Fig. 128.—Puna and its Environs.

Scale 1 : 385,000.



provincial administrations are even permanently located here. Before it was made the chief town of a British district, Puna had been the residence of the Mahratta Peshwas, and as such became the great industrial centre for the whole of the northern region of the plateau. At that time its factories produced silk and cotton goods, metals and ivories, and they still yield various fancy wares. But English competition has definitely deprived it of its former industrial monopoly. Nevertheless Puna is rapidly increasing, thanks to its position at the converging-point of the great trade routes. Many Mahratta merchants, still regarding it as their capital, settle here after retiring from business. Standing on the right bank of the Muta, 1,850 feet above the sea, it is overawed by the British military town, which lies to the north. In this direction European villas and pleasure-grounds occupy

nearly the whole space between Puna and *Kirki*, another considerable town also flanked by British cantonments. Till recently the intervening plain was almost treeless; now it is shaded, especially along the river banks, by plantations of the babul (*Acacia arabica*). Puna and Kirki are now supplied with abundant water from the Muta, which is retained in a reservoir, nearly 6 square miles in extent, by a dam regulating the discharge throughout the year. From the Mahratta period Puna has preserved some curious painted houses and temples, besides the palace of the Peshwas, which stands on the Parvati Hill, in the midst of the "Garden of Diamonds." North of the city is the sacred spot, at the confluence of the Muta and Mula, where Hindu widows were burnt with the bodies of their husbands, before the proclamation forbidding suttee issued in 1829 by Lord Bentinck.

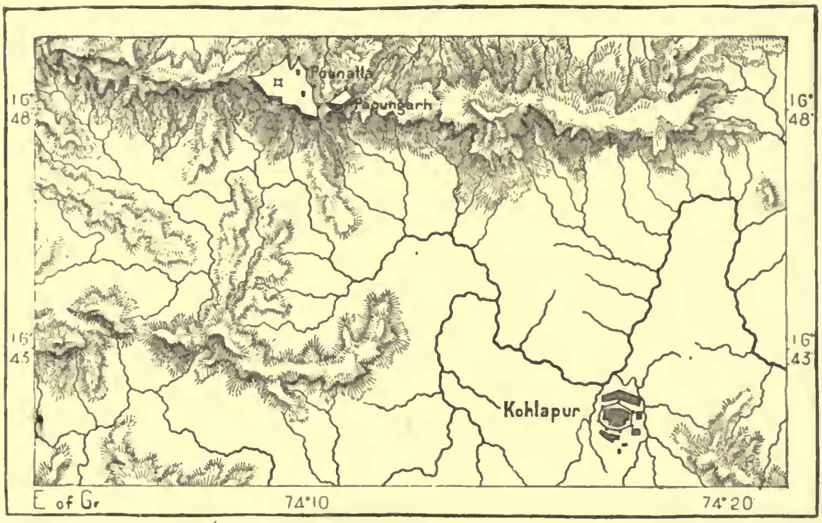
Near the railway to Bombay, and not far from the Bhor ghat, are the *Karli* grottoes, which, being more easily accessible, are much more frequently visited than those of Ajanta and Ellora. The shaitya, or great temple, the most perfect and finest underground sanctuary in India, is opened halfway up the side of a hill. In front stands a monumental porch, through an arched opening in which the light penetrates to the nave. The walls of the vestibule are decorated with sculptured balconies and bas-reliefs, and the whole weight of the hill seems to be supported by three elephants cut in the live rock. The temple, with its simple and majestic proportions, has much the appearance of a Christian church. The open teak roof, from which draperies were formerly suspended, disappears in the gloom, while right and left fifteen octagonal columns, separating the nave from the lower aisles, support above their capitals rich sculptures of elephants, horses, and human beings in various attitudes. The crypt is rounded off at its upper end with an apse where the altar has been replaced by a *dagobah* surmounted with sacred ornaments. An inscription on the porch attributes this cave-temple to a king who flourished some twenty centuries ago.

Junar lies north of Puna, near the steep scarp of the Ghats and at the foot of the magnificent three-crested mountain crowned by the fortress where was born the famous Sivaji, founder of the Mahratta power. Here also are some monuments dating probably from Buddhist times. *Ahmednagar*, a town of Mussulman origin, stands on the site of *Bingar*, and still preserves its old fort, besides some mosques, which have been converted into dwellings by the European residents. *Sholapur*, the chief station between Puna and Haidarabad, boasts of no remarkable structures, but has become the most industrial town on the plateau, and now employs 5,000 hands on its looms. It has also a large trade, which is shared in by *Pandharpur* on the Bhima, a much-frequented fair and place of pilgrimage, and formerly a hotbed of cholera. *Kalbargah*, lying, like Sholapur, on the Bombay and Madras railway, but north of the Bhima Valley, is a Mohammedan foundation noted for its architectural curiosities. Former capital of the Dekkan, it contains the tombs of several kings who flourished in the fourteenth and fifteenth centuries, besides some mosques, one of which is noteworthy as the only one in India whose anterior cloister is completely roofed in to shelter the faithful. The neighbouring fort is

now a vast pile of ruins covering a steep crag tenanted by a few peasants and infested by panthers.

Satara, metropolis of the Upper Kistna valleys, occupies a position analogous to that of Puna near the edge of the Ghats. It was also one of the Mahratta strongholds, and takes its name of "Seventeen" from the seventeen bastions defending it. Under the British administration it has acquired great commercial importance from the highways connecting it with Bombay and the cities of the Dekkan, but it is still unconnected with the network of railways. In the Satara district, and at an elevation of 4,780 feet, stands *Mahabaleshwar*, the most frequented "holy city" in the region of the Ghats. Most of the high functionaries of Bombay reside here in spring; but they withdraw to Puna as soon as the rains set in. Mahabaleshwar was selected as a health-resort, in 1828, by Malcolm, governor of

Fig. 129.—Kolhapur and Punalla.
Scale 1 : 290,000.



Bombay; and one of the neighbouring villages still retains the name of *Malcolmpet*. A little to the east of this spot a verdant eminence marks the source of the Kistna, above which stands a much-frequented temple of Mahadeo, and a still more imposing sanctuary dedicated to Ganesa (Ganputti), God of wisdom. The pilgrims to these shrines reside chiefly in the neighbouring town of *Wai*, on the Upper Kistna. The isolated crags of the Ghats to the north and west are crowned by the old Mahratta strongholds of *Rajgarh*, *Torna*, *Partabgarh*, and *Raigarh*, residence of Sivaji.

Kolhapur, another Mahratta town on a tributary of the Kistna, near a pass in the Ghats leading to the port of Ratnagiri, is the capital of a vassal state, round which are grouped eleven other principalities of less importance. In this region of the Dekkan almost every hill and isolated peak has its fortress, often rivalling

the great strongholds of Rajputana. Amongst these, conspicuous is *Punalla*, whose extensive walls and ramparts occupy the summit of a plateau 9 miles to the north-west. A still more romantic place is the fortified city of *Visalgarh*, which stands on the outer edge of the Ghats, but which has been forsaken by its raja for the more accessible town of *Málkapur* on the plateau.

South of the Kolhapur district stands the town of *Belgaom*, on a headstream of the Kistna. The British cantonments of this important strategic point keep in awe all the surrounding petty states, while at the same time contributing to develop the trade of the port of *Vingorla*, on the Konkan coast. This part of the Dekkan is relatively more thickly studded with towns than any other region of the plateau. South-east of Belgaom is *Dharwar*, capital of the district, which however is surpassed in commercial and industrial importance by *Hubli*, a twin town with an intervening stream which drains through the Gangawali to the west coast. Few places occupy a more favourable position for trade than Hubli, although it still lacks the advantage of railway communication with the coast or the interior. East of it is the important cotton mart of *Guduk*.

On the arid tracts stretching east of the plains and valleys near the Western Ghats, the centres of population become less frequent. These districts suffer much from drought, and a famine which lasted ten years, from 1396 to 1406, changed the whole country to a wilderness. During the less terrible drought of 1876–77, the population was again decimated; in the Kalaji district one-fifth of the inhabitants perished, and the survivors are amongst the most wretched peasantry in India. Yet here were formerly some flourishing places, such as *Bijapur*, which covers the summit of a hill with its massive lava walls and innumerable mosques, palaces, and tombs, mostly in a very noble style of architecture. One of its domes is the largest in India, and even in Europe it has but few rivals. Two centuries ago Aurengzeb captured this place, which at that time equalled Agra and Delhi in splendour, but which gradually became a "city of the dead." Nevertheless, some groups of dwellings, tanks, and a bazaar are still comprised within the circuit of its walls.

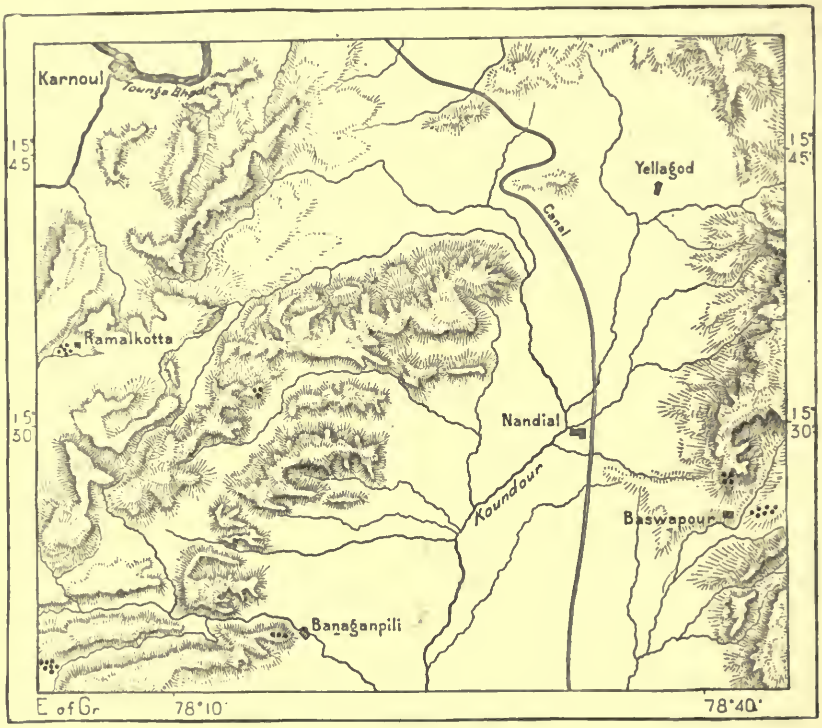
South of the Kalaji district a space of nearly 10 square miles on the left bank of the Tunga-bhadra is encumbered with the ruined granite temples and palaces of *Hampi*, or *Bijanagar* (*Vijayanagar*), at one time a flourishing Hindu capital. A few pagodas, and portions of its Cyclopean walls, have escaped the ravages of time; but no attempt has been made to restore the dwellings, although the surrounding district is very fertile, and abundance of water might be had from the river for irrigation purposes. The traveller Nicolò di Conti, who visited Bijanagar in the fifteenth century, gives it a circumference of 60 miles, and adds: "The sovereign, more powerful than all the other kings of India, had 100,000 soldiers, and engaged 12,000 women, 4,000 for the kitchen, 4,000 to form an honourable cavalcade behind him, and 4,000 carried in palanquins. The 2,000 favourite wives committed themselves voluntarily to the flames on his grave." In the district are picked up large quantities of Venetian gold pieces, attesting the extent of the trade carried on by Venice with Southern India at a time when this region was unknown

to the rest of Europe. Bijanagar is now merely a place of pilgrimage, and the population has migrated south-westwards to *Hospet*, or the "new town," a railway terminus, and eastwards to *Ballari* (*Bellary*, *Valatari*), a trading-place commanded by two ranges of forts and connected by a branch line with the Madras railway. Ballari is now one of the chief military stations in British India.

Below Bijanagar, the Tunga-bhadra forms the frontier between the Madras Presidency and the Nizam's dominions. But above its confluence with the Kistna the only large place on its banks is *Karnul*, which is almost cut off from all communication with the rest of the country. Hence great difficulty was found in

Fig. 130.—Diamond Fields of Karnul.

Scale 1 : 1,770,000.



Diamond Mines.

12 Miles.

supplying it with provisions during the famine of 1877, when the normal rate of mortality was more than trebled. Its trade has also now been diverted to *Gutti*, *Adoni*, and *Raijpur*, stations on the Madras and Bombay railway. Between Adoni and Raijpur the line is carried over the Tunga-bhadra on a bridge 1,250 yards long and supported by 53 piers. The diamond-fields in the Karnul district are now worked only near *Banaganpili*, *Ramalkota*, and one or two other places. These mines have frequently been visited since the time of Tavernier, when they yielded stones valued at 16,000 crowns, and when colonies of diamond-cutters were settled in the neighbourhood. Now the returns are but slight, although the hands

employed by the local Nababs only receive three halfpence and a dish of rice a day.

Haidarabad, residence of the Nizam, stands on the Muti, a northern tributary of the Kistna, and is connected with the Indian railway system. This capital of the largest native state still tolerated by the English is the most populous city outside the British possessions. It covers altogether about 11 square miles, and has a population of probably 200,000 within the walls, and as many more in the surrounding suburbs. The enclosure is pierced by five gates; but a large portion of the plain is itself encircled by a chaos of granite rocks, forming a natural rampart, which has often protected Haidarabad from the assaults of the Mahrattas. The intervening spaces are covered with jungle, and at some points the rocky belt is no less than 18 miles wide, forming a sort of desert borderland, where the invaders found no supplies. This natural enclosure has also facilitated the establishment of reservoirs on the plain of Haidarabad. From one of these, which covers an area of 10,000 acres, the city receives an abundant supply of water.

The Nizam's palace forms an aggregate of low buildings, inhabited by about 7,000 troops and retainers. The soldiers are mostly Afghans and Arabs, descended from the warriors who accompanied their Mussulman leaders. Amongst the Nizam's body guard an honourable position is held by a corps of Amazons. There is nothing striking about the palace except its terraces, whence a view is commanded of the city, with its gardens and mosques. Conspicuous amongst the latter are the Char Minar, or "Four Minarets," and the "Mecca," so named from its supposed resemblance to the Arabian sanctuary. The magnificent palace of the British Resident lies beyond the city in a splendid park defended by bastions. At *Bolaram*, 10 miles farther north, the same official has another castle equally defended from all attack. Between these two points stretch the vast cantonments of *Sikandarabad* (*Secandarabad*), the strongest British military station in India. It covers a space of about 20 square miles, including a commercial mart and several villages. A retrenched camp, so disposed as to serve as a place of refuge for the Europeans of the Residency, has been constructed at the strongest point of the cantonments, and supplied with water and provisions for a twelvemonth's siege. Thus has every precaution been taken against any possible danger to the paramount power from the existence of a large native state in the heart of the Peninsula.

Golconda, former capital of the kingdom, lies west of the cantonments and north-west of Haidarabad. But little of this place is now standing, except its citadel. It lies amid a chaos of granitic boulders, huge fragments which, according to the local legend, "the architect of the universe dropped here after he had finished the mountains." Amongst these rocks is a block 260 feet high, which supports the black walls of the fort, and which, with its numerous mausoleums, looks like a vast necropolis. Silence now reigns over the magnificent city, whose very name still suggests inexhaustible treasures. We continue still to speak of the "Golconda Diamonds," in memory of the precious gems formerly stored up by the Sovereigns of the Dekkan. Lapis-lazuli from Badakhshan, rubies from the Upper

Oxus, sapphires from Burma, diamonds from Sambalpur and Karnul, pearls from Ceylon, then glittered on the robes and arms of the Moslem princes, whose tombs are still seen scattered over the rock of Golconda. These monuments, which have been restored by the Nizam, resemble each other, if not in size and wealth of details, at least in their general outline. Occupying the centre of a terrace approached by a flight of steps, all form square granite masses, encircled by

Fig. 131.—Golconda. Ramparts of the Town and Citadel.

Moorish arcades, and adorned with minarets at their four corners. In the middle of the structure rises a square tower, also with colonnades and spires, and decorated with bright stuccoes, many coloured faïences, and inscriptions in white letters on a blue ground. Amongst other tombs south-east of Haidarabad is that of the French General Raymond.

After piercing the Eastern Ghats, the Kistna enters a region regarded as a "Holy Land," centuries before Haidarabad had become the "Mecca" of the Indian

Mohammedans. Near *Darnakota*, on the right bank of the river, are seen numerous mounds of *Amzavati*, the remains of structures grouped round a tope, whose more remarkable sculptures, evidently due to Græco-Baktrian artists, have been removed to London. The peristyle, 600 feet in circumference, which enclosed the chief tope, was embellished with over 12,000 statues; and the stone, carved like so much lacework, represents the sacred tree, the wheel, the snake, the horse, and all the other symbols of Buddhist worship. When the Chinese pilgrim H'wen-tsang was wandering over the Buddhist world in the middle of the seventh century of the new era, the dagobah of Amravati and the neighbouring shrines were still in their full splendour. In the Darnakota district are seen numerous sepulchral circles formed of undressed stones, like the megalithic monument of Stonehenge.

On the left bank of the river, 18 miles lower down, the little town of *Beznata* stands at the foot of some gneiss hills pierced by Buddhist caves. In another underground temple, on the opposite side, Buddha has been supplanted by Vishnu. At this entrepôt, where the Kistna emerges from the gorges, most travellers cross the river. Here also has been constructed the dam which diverts the stream to the [illegible] irrigation canals crossing the delta in all directions. *Guntur*, another [illegible] the river, has been chosen by the government as the capital [illegible] the two seaports of *Nisampatam*, on the south, and [illegible] the delta, have been choked by the alluvia, and [illegible]ters. Yet Masulipatam, when in the hands of [illegible] still a populous town. Here the French [illegible] all sides, where some traffic is carried on. [illegible]*li-bandar*, lies in the interior, 3 miles from [illegible]y destroyed by a cyclone, in which 30,000

CHAPTER XV.

SOUTHERN INDIA.

Madras, Mysore, Curg, Cochin, Travancore.

IN some respects the southern extremity of the Peninsula, stretching from the Kistna Valley to Cape Comorin, may be regarded as representing historic India. Alexander's expedition revealed to the western nations nothing but the Indus and the plains of the Panjab, which in its climate, soil, and products formed a land of transition between Iran and Hindustan. But the true India vaunted by the Arab merchants, the marvellous region whence came the spices, precious stones, perfumed woods, and costly tissues worth their weight in gold, still remained shrouded in mystery. This half-mythical land, whose very name summed up all the wealth and loveliness of the world, was reached at last by the sea route. The course of the early navigators was directed more frequently to the Malabar coast than to the Konkans; for pepper, cinnamon, sandalwood, and the other most highly prized merchandise were to be had not in the north, but along the southern seaboard. For the western peoples the land "whence came pepper" became associated with the name of India in a pre-eminent sense. This was the region unfolded to our view in the enchanting tales of the "Arabian Nights"; here were not only to be had the most precious freights, but here also the peninsula assumed its most lovely aspects; here were displayed the most striking contrasts between the low coastlands, fringed with the feathery coconut palm, and the lofty ranges, with their hazy outlines rising in the mid-distance against the bright azure skies.

The Southern States of India also presented to the foreign seafarers the strange spectacle of communities entirely differing in their manners, usages, and religions from those of the western peoples. The new world, to which they now found themselves transplanted, thus offered on all sides more subjects of wonder than the northern section of the Peninsula. Nevertheless, the inhabitants of the south, while differing in race and speech both from the Iranians and the northern Hindus, are themselves in some respects, and especially in their religious practices and observance of caste, the most distinctly Hindu element in India. Many passages in the old

writings, whose sense has been lost in the northern provinces, can be understood only by studying the social conditions of the south. The gradual encroachments of the first Aryan immigrants, followed by the Græco-Baktrians, Arabs, Afghans, Tatars and Persians, have resulted in a greater concentration of the aboriginal ethnical and social elements in the southern regions. Hence, here is to be found the old India, the India of the primæval races and of immemorial traditions.

Yet this part of the Peninsula, being more accessible by sea, has received more foreign settlers than the northern provinces. During the first centuries of the new era, Christian communities were established on the Malabar coast. After doubling the Cape, Vasco de Gama landed on the same coast; and here were made the first conquests of the vast colonial empire founded by the Portuguese in the East. In the same southern region, and round about the strongholds of Madras, Pondicherry, Seringapatam, and Mysore was fought out the great struggle for the ascendency between the English and French. The victory remained with the former, who since the close of the last century have continued to be the undisputed masters of all the lands stretching south of the Kistna. A few native states are doubtless still tolerated; but even these are indirectly governed by British Residents and overawed by entrenched camps and fortresses. Nor is any communication with the sea enjoyed by any of these States, except the kingdoms of Cochin and Travancore, which form a narrow strip of territory between the Cardamom hills and the coast lagoons.

The Mysore and Nilghiri Uplands.

The triangular mass of Southern India forms, on the whole, a plane with a far greater incline towards the east than that of the Dekkan. With a narrower base and more elevated ranges, the mean slope is everywhere relatively more decided; while the climatic zones are brought into closer proximity. Here also is presented a greater contrast between the flora and fauna, the populations and products of the plains and uplands. The primæval forests, which have already disappeared from the Northern Ghats and the Dekkan, still cover extensive tracts in the southern districts, while the clearings between them and the cultivated plains are still inhabited by many aboriginal tribes totally distinct from the cultured peoples of the lowlands. Before the arrival of the English, all communication between the seaboard and highlands was prevented by the rapid change of climate on the slopes of the hills. But the very opposite result has been brought about since the land has fallen into the hands of strangers from North-west Europe. Finding that in the upland valleys, and on the plateaux rising 6,000 or 7,000 feet above the sea, the climate resembled that of the British Isles, the English have here founded settlements and health-resorts far above the unhealthy low-lying coastlands. Nowhere, except on the advanced spurs of Sikkim and the Western Himalayas, have the conquerors obtained a more solid footing than on the Nilghiris of Southern India. This highland citadel, encircled by Dravidian populations, has already been partly transformed to a New England.

South of the broad gap through which the Gangawali and its tributaries flow to

the Dekkan plateaux, the Coast Range begins again, and from this point runs parallel with the sea at a mean distance of 36 miles inland. A few granitic crests attain elevations of from 4,000 to 5,000 feet, and in the Curg territory the Tadiandamol peak even rises to a height of 5,800 feet. Along the west foot of the steep escarpments there stretches a laterite plateau, slightly inclined seawards, and furrowed at intervals by deep gorges, which form the rocky beds of intermittent torrents. Here and there rise isolated granite or gneiss crests, some completely bare, others overgrown with brushwood. But the Ghats properly so called are almost entirely clothed with a forest vegetation. Curg itself was, till recently, little more than one vast forest continued eastwards by a belt of woodlands, which forms the natural limit of the Mysore territory. In some districts the slopes are uniformly covered with evergreens, while elsewhere nothing is to be seen except dense thickets of bamboo. But other parts of the Ghats present a far greater variety of species, such as the *pun* (*calophyllum*), whose trunk, from 80 to 100 feet high, is much esteemed by ship-carpenters; the teak, ebony, iron-wood, bread-fruit tree, wild mango, white cedar, and many other tropical plants. Not having yet been brought under State administration, these forests continue to be worked without method by the natives, who here gather cardamoms, gall nuts, wild arrowroot, cinnamon, gums and honey. Sandalwood flourishes chiefly along the eastern slope of the Ghats, in the state of Mysore. The Government retains a monopoly of this valuable wood, which is forwarded to Mangalore, and especially to Bombay, where it is used in the preparation of small objects known in commerce as "Bombay Work."

The virgin forests of Curg and Mysore still serve to harbour the tiger and panther, but the game which formerly abounded on the wooded slopes of the Ghats has mostly disappeared; hence the wild beasts are driven to seek their prey in the neighbourhood of human habitations, so that they have become more dangerous than formerly. Till recently, elephants were so numerous that in the year 1874 as many as fifty-five were captured in a single day on the Mysore frontier. This wholesale destruction is now forbidden, and the peasantry are allowed only to protect their fields by surrounding them with ditches.

The Nilghiris, or "Blue Mountains," form an almost independent system, although the Yellamalah, one of their western peaks, is connected with the Brahmaghiri range in Curg by a ridge running south-east and north-west. On all other sides the steep escarpments of these highlands rise high above the surrounding plateaux and plains. The whole mass was formerly surrounded by a belt of marshy woodlands, resembling the terai of the Sub-Himalayas; and it is still encircled by the rivers Moyar on the north and Bavani on the south, which, after uniting their waters at the foot of the eastern spurs, flow to the Caveri. The valley of the Moyar forms a partial parting-line between the Wainad plateaux, noted for their gold mines, and the Mysore uplands, which form the northern edge of the Nilghiris. The vast irregular mass of the Blue Mountains rises altogether over 3,000 feet above the northern highlands and 6,500 above the southern plains. The Dodabetta, their culminating-point, and five other *bettas*, or "mountains," exceed 8,300 feet in

absolute elevation. Above the outer zone of forests and steep escarpments an irregular plateau is reached, where almost perfectly level tracts alternate with gently undulating hills. Pleasant groves here clothe the narrow valleys intersecting the plateau, while the heights are covered with herbage, and here and there with turf. So slight are the slopes that roads have been laid down in every direction, giving easy access to the summits, whence a superb view is commanded of the lowlands stretching away beyond the horizon. Three carriage routes already lead from

Fig. 132.—Forests of Curg and Mysore.

Scale 1 : 4,800,000.

these lowlands to the stations on the plateau ; but the Madras railway still reaches no farther than the foot of the south-eastern scarp.

The Nilghiris were for the first time explored by Keys and MacMahon in 1814 ; but, like so many other valuable documents, their official report became buried among the archives of the Company. But five years thereafter, Whish and Kindersley, two officials who had started in pursuit of a smuggler, rediscovered, so to say, this delightful upland region, and revealed to the English residents on the sultry coast the existence of a neighbouring plateau with a climate resembling that

of temperate Europe. Here the first house of the sanatorium was erected in 1821, two years after the foundation of Simla. The naturalist Leschenault de la Tour, exploring this part of the Blue Mountains, collected 200 species of plants, all of a European type, and differing from the tropical forms of the lowlands. One of the commonest trees is the oak, and since the plateau has been covered with English towns, villages, and country seats, the European aspect of the scenery has been intensified by the introduction of most British plants into the parks and gardens. In many places the illusion is almost complete, and the English resident may well fancy himself settled amidst the Malvern hills, or surrounded by a charming Devonshire landscape. His house is covered with the same creepers, his garden grows

Fig. 133.—Nilghiri Hills.

Scale 1 : 650,000.

12 Miles.

the same pretty flowers, and trees of the same species lend a grateful shade to his dwelling. European songsters, let loose in the woods, have flourished and increased, and the lakelets of the plateau, which formerly contained a single species only, have been stocked with carp, tench, and trout.

On the summit of Dodabetta, where a meteorological station has been established, the mean temperature is 52 deg. F., as on the banks of the Loire; and that of the various other stations corresponds, according to their altitude, with Gascony, Provence, Tuscany, or Sicily. But lying within the tropics, the Nilghiris are not exposed to the same annual vicissitudes of heat and cold, and on Dodabetta the variation between the hot and cold season scarcely amounts to 6 deg. F. Thus on these uplands spring is

perennial, and the great changes are not from heat to cold, but from dry to wet weather. From the end of October to the beginning of May the sky is almost cloudless, but during the rainy season the plateau is often wrapped in fog. Here, next to altitude, aspect is the most important climatic condition. During the south-west monsoon the swollen rivulets become rivers, and the silvery waterfalls are converted into foaming cataracts, by which the edge of the plateau is constantly eroded. One of the finest of these falls is that of the Paikara, some 10 miles north-west of Utakamund.

The Pal-ghat, Anamalah, and Palni Hills.

South of the Nilghiris, the Ghats are completely interrupted. The Pal-ghat gap, formerly overgrown with teak forests, here intersects the Peninsula between the Malabar and Coromandel coasts, thus offering to the moist winds of the south-west monsoon a broad opening towards the plains of Coimbatore and the Caveri basin. The Ponani River, draining to the Arabian Sea, rises east of the mountains, whereas the torrents descending to the Caveri have their sources much farther west, so undecided is the water-parting of the Pal-ghat, which has an elevation of scarcely 800 feet. A depression affording such easy communication between the two seaboards was naturally at all times of great strategic importance; hence it was guarded by a citadel, frequently taken and retaken during the local wars, and is now replaced by one of the most important railway stations in the South Indian system. The line traversing the gap from coast to coast was opened in 1862.

The mountains rising to the south of the Pal-ghat correspond to the Nilghiris, forming with them, so to say, the two supports of a vast gateway. Like the Blue Mountains, the Anamalah (Anamalei), or "Elephant Mountains," consist of gneiss, with quartz and porphyry veins; like them, also, they flank the Pal-ghat, rising abruptly above the malarious zone of the terai, and terminating in a hilly plateau, where the forests are abruptly replaced by dense herbage. The flora of the two systems differs little, although the more luxuriant vegetation of the Anamalah Hills may be regarded as forming the transition between those of the Nilghiris and the Ceylon highlands. Yet the rose and strawberry, very common on the north, have not been found on the south side of the Pal-ghat. On the other hand, the Anamalah fauna still comprises several species which have disappeared from the Nilghiris. Herds of the wild ox (*bos gaurus*) roam the forests, and elephants are still numerous enough to be hunted for their tusks alone.

The Anamalah Hills are, on the whole, perhaps less elevated than the Blue Mountains, although the Anamudi, their culminating-point, is higher than the Dodabetta. It rises to an altitude of 8,950 feet, and ten other peaks exceed 7,000 feet. "Discovered" more than thirty years after the Nilghiris, the Anamalahs have remained less accessible, and the health-resorts established here by the English are still mere hamlets. This is due partly to their greater distance from Madras, partly to the political conditions. The Nilghiris lie entirely within British territory, whereas the highest peaks of the Anamalahs are comprised in the native states of Cochin and Travancore.

The Anamalahs form a less isolated group than the Blue Mountains. Towards the west they break into parallel ridges, which descend in terraces down to the Malabar coast, and which have earned for this region the title of Malabar, that is, *Malya var*, the "Many Hills." The system is continued southwards by a chain which may be considered as belonging to the Ghats, although severed from them by the gap of Coimbatore; towards the east, also, it impinges on the Palni high-

Fig. 134.—The Paikari Falls in the Nilghiris.

lands, which stretch foi some 60 miles thence to the Madura lowlands. The Palni, or Varaghiri—that is, "Wild Boar Mountains"—are scarcely less elevated than the Anamalah on their west side; and the Pernalmali, one of their peaks, exceeds 8,000 feet. But towards the east they fall rapidly, terminating in a simple ridge of wooded hills. The southern scarp is the steepest, in some places presenting the appearance of a vertical wall of gneiss towering above the coastlands.

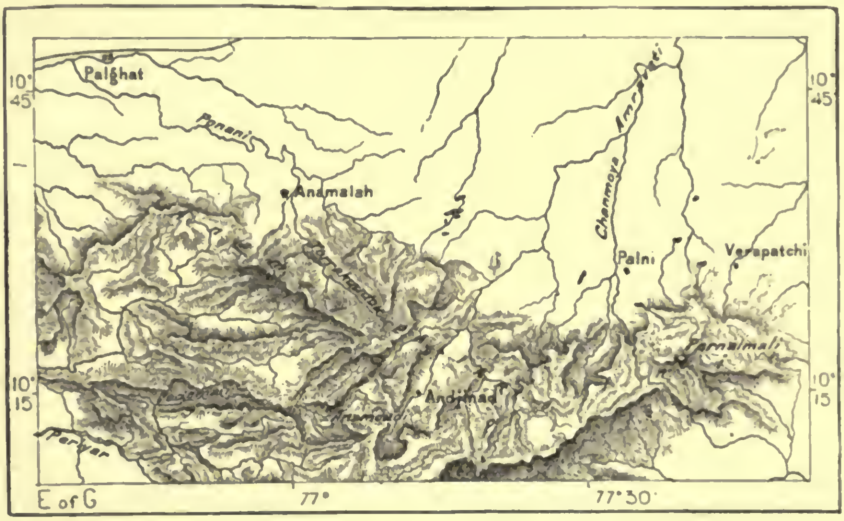
The grassy plateaux of the Palni groups lack the fertility of the Nilghiris,

where the decomposed rock, mingling with the vegetable humus, produces an extremely rich soil. On the Palnis the sub-soil is generally a firm clay, on which the humidity settles, and where the decayed vegetation is transformed to layers of peat. Nevertheless, some rich tracts are found in the depressions of the plateau and in the lower valleys, where the gardens and orchards of the European settlers have justified the name of Palni—that is, "Fruit Mountains," applied to these uplands.

South of the Anamalahs and Palnis, the mountains completing the southern highlands of the Peninsula fall gradually towards Cape Comorin. The Cardamom range has a mean altitude of scarcely more than 3,000 feet, although they present a continuous barrier broken by but few gaps. Agastya, their highest peak, on which the raja of Travancore had established a now abandoned observatory, is

Fig. 135.—Anamalah Hills.

Scale 1 : 1,850,000.



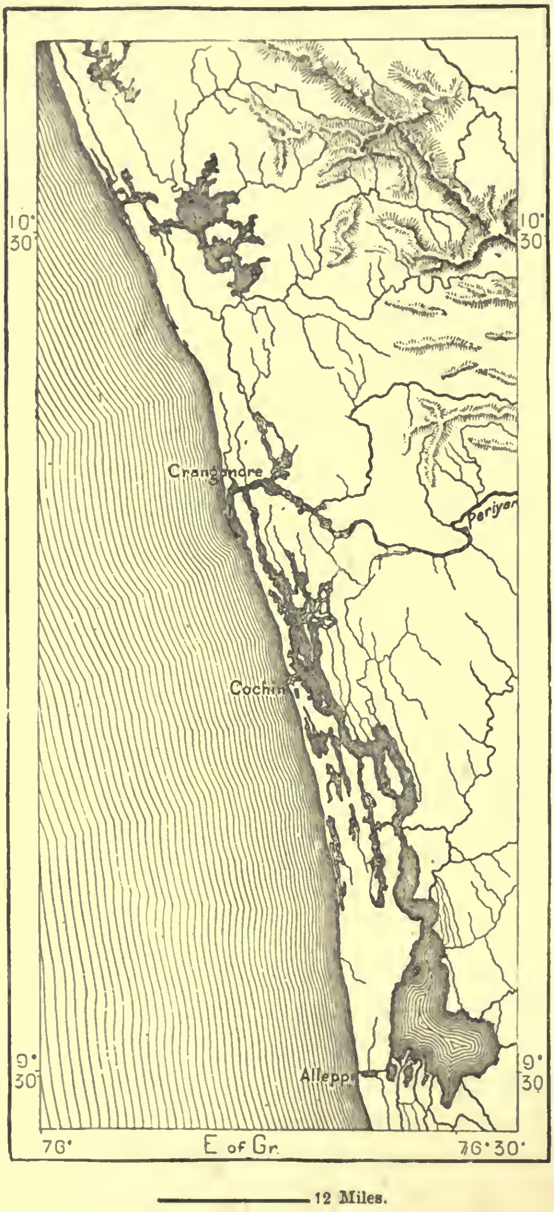
24 Miles.

dedicated to the mythical beings, at once God and man, traditionally supposed to have converted the inhabitants of this region to Brahmanism. Covered with forests still infested by multitudes of wild beasts, this southernmost range of the Peninsula is much dreaded on account of its malarious climate. Till recently it was visited only by a few natives pursuing the chase, or in quest of fruits, gums, and bark. But here also roads are gradually penetrating, and, in imitation of his English protectors, the raja of Travancore has recently founded the health-resort of Muttukulinyal at an elevation of 4,000 feet above sea level. Towards the east the Alighiri ridge, branching off from the southern chain, penetrates far into the Madura plains. The lowlands are also studded with numerous isolated bluffs, formerly marine islands, "resembling haycocks scattered over the surface of a meadow."

These hillocks are the last traces of the Eastern Ghats, which, north of the Caveri, are represented by the Shivarai, or Siva-raj, one of whose peaks is nearly

5,500 feet high, and by a large number of other groups and ridges. The region south-east of the Mysore plateau is also skirted by a labyrinth of hills; but as they advance northwards the Eastern Ghats assume the normal aspect of a coast range, with peaks varying in height from 3,500 to 5,000 feet. In the triangular space limited by the Western and Eastern Ghats, Nilghiris and Shivarai, the southern division of the Dekkan plateau, that is, Mysore, which has a mean elevation of 2,000 to 3,000 feet, is strewn with isolated crags, to which has been applied the term *drúg*, or "inaccessible." Some of these masses, rising from 1,000 to 1,600 feet above the surface of the plateau, look like towers, and can be scaled only by steps cut in the rock. Others are clothed with verdure to the summit, or wherever the rains produce sufficient moisture to form little pools or springs. These bluffs were all admirably suited for strongholds, hence became a frequent source of strife amongst the local potentates. The western part of the plateau, skirted by the Ghats, is a romantic region of hills and dales, of green woodlands and foaming torrents. Solitary huts are strewn over the slopes fringing the paddy-fields, and amid the areca and banana groves: but towns and villages are rare.

Fig. 136.—The Cochin Backwaters.
Scale 1 : 1,000,000.



The Malabar and Coromandel Coasts.

Except the Ponani, which rises on the east side of the Anamalah Hills, the rivers of Malabar have short courses, and reach the sea in independent channels.

In the dry season their beds are almost dried up, but during the monsoon they send down a considerable volume, bursting their banks, wasting the cultivated tracts, and sweeping away the villages. West of the Mysore and Curg highlands most of them flow directly to the coast, but farther south they discharge into the riverain lagoons, here known as *backwaters*. In many places these lagoons are disposed in two, three, or even more parallel lines with the coast, and the whole seaboard seems to have been composed of beaches successively deposited by the sea, and then separated from each other by shallows, where the salt has been gradually replaced by fresh water.

The level of the backwaters changes with the seasons, and some are alternately filled by the inundations and dried up during the droughts. Others have been completely banked off from the sea and reclaimed; but during the monsoons these lacustrine paddy-fields are always in danger of being inundated. The works undertaken to prevent these disasters occasionally prove inadequate; the dykes are swept away by the pressure of the sea or the watercourses, and these little "Hollands" on the Malabar coast again become engulfed. Along the whole coast a line of backwaters is carefully maintained for navigation purposes, and nearly the whole local trade of Cochin and Travancore is thus carried on in calm waters. Even during the dry season a regular service is kept up between Cranganore, Cochin, and Allepi for a distance of about 100 miles. At other times the line is continued much farther, in one direction towards Mangalore, in the other to Trivandram. Near Quilon, where the chain of lagoons was interrupted by a rocky headland, a canal has recently been cut through the rock, to avoid the danger of doubling the cape. Here the land routes are almost useless, travellers being able to transport themselves and their wares 180 miles for a comparatively trifling sum.

Rounding off in a graceful curve eastwards, the Malabar coast terminates abruptly at the Kamari, or Kanjamur headland, the Cape Comorin of European geographers. Beyond this point two successive bays mark the commencement of the coast of Coromandel, a name handed down probably from the time of the ancient Dravidian Chora dynasty. Here the highlands proper fall off before reaching the cape, within 21 miles of which the chief range terminates in the Mundraghiri Peak, whence the water-parting falls gradually through a series of terraces. Then the last eminences disappear under the forest growths, some scattered granite blocks alone marking the direction of the main axis. Between the last hills and the cape an old wall, here and there interrupted by rocks and jungle, continues seawards the natural rampart of the Cardamoms, thus blocking the southern gap, which is now soon to be traversed by a railway. Nor did this artificial barrier, even in past times, prevent insensible transitions from taking place from shore to shore. Meeting with no serious obstacle, the south-west monsoon sweeps freely over the southern plains of Coromandel, supplying sufficient moisture to feed the perennial river Tamraparni. On the other hand, the north-east monsoon reaches the southern districts of Travancore, west of Cape Comorin, here producing a corresponding mixture of climates and vegetation. Hence the

surprising number of species found in this region, where, during a short excursion, the botanist Leschenault de la Tour collected over forty useful plants, which he afterwards introduced into the island of Réunion.

Even in their physical appearance and the outlines of their shores, both slopes resemble each other. On either side of the cape the lacustrine basins scattered over the surface no longer form continuous lagoons separated by strips of coastlands from the sea, but irregular ponds, dammed up and utilised in irrigating the paddy-

Fig. 137.—Cape Comorin.

Scale 1 : 400,000.

fields. Nevertheless, the section of the Madura coast known as the "Fisheries" is a true desert, covered with shifting dunes. Here the decomposed surface sandstone is converted into sand, which is distributed by the winds over the country, and which has already swallowed up several villages. Yet amid these sands flourish many palm-groves, supplying to thousands the wood for their huts, fruits and sap for their food and drink.

In no other part of India are tanks more numerous than on the plains sloping

to the Coromandel coast. According to the last official returns, there are as many as 5,700 in Madura, and over 37,000 in Mysore. In some districts the space occupied by these reservoirs equals that of the irrigated lands themselves, and many cover a very large area. The Chumbrum-bankum, near Madras, the largest of these artificial basins, is retained by a dam nearly 4 miles long; and another, fed by the northern branch of the Caveri, is confined on its west side by a dyke over 10 miles in length. Most of them exist from time immemorial, having been always maintained by the people in spite of wars, famine, and pestilence. They are prevented from spreading out into marshes by their vertical, or steeply inclined edges, which are intersected by oblique tracks accessible to men and animals. Nevertheless, their forms have been gradually modified by floods, landslips, and crevasses, in such a way as generally to harmonise with the features of the surrounding landscape. Their bays, inlets, and headlands often give them the aspect of natural lakes.

The Pennar and Caveri Rivers.

These reservoirs are all the more needed that the streams flowing from the Western Ghats and the Mysore plateau are subject to the greatest vicissitudes in their discharge. The Pennar, Pinakini, or Poniar—that is, "River of Gold"—rises in the moist neighbourhood of Mysore, and after a course of 340 miles is completely exhausted in the dry season. In its upper course it is no doubt arrested at intervals and diverted to the reservoirs, over five-sixths of its normal volume being thus applied to irrigating the riverain plains. But during the rains one of the upper tanks will sometimes overflow or burst its barriers, the sudden access of water and débris causing those lower down to give way in their turn. Then a perfect deluge sweeps from terrace to terrace down to the plains, which for months together are changed to an inland sea.

Like most other rivers draining to the east coast of the Peninsula, the Pennar ramifies into several branches above its mouth, and advances seawards through a crescent of alluvial deposits. Its waters are dammed up at Nellore, and diverted southwards to a network of rills, irrigating a tract over 62,000 acres in extent. A portion of the stream is also intercepted at the "gate" of the Eastern Ghats, and directed north-eastwards towards the Kistna basin.

South of the Pennar, or Vata Pennar—that is, "Northern Pennar"—as it is also called, other less copious streams, such as the Palar, Ten Pennar, or "Southern Pennar," and Vellar (Vallaur), or "White River," present analogous phenomena. The Palar, or "Milk River," also flowing from the Mysore plateau, becomes alternately a majestic stream and a dry bed of sand. During one of its inundations, which still lingers in the memory of the riverain populations, it left its old channel in the delta region, where now a mere rivulet flows under the name of the Cortelliar, or "Old Palar," to a lagoon north of Madras. The new Palar, which receives nearly the whole volume of the fluvial basin, enters the sea 54 miles south of its ancient mouth.

Of all the South Indian rivers the Caveri, already known by this name to the

geographer Ptolemy, is at once the most copious, and drains the largest area. Rising on the same slope of the Western Ghats in the Curg territory, it traverses the whole southern division of the Mysore plateau, whence it escapes over the Sivasamudram Falls. At this point it ramifies into two branches, encircling with their cascades and rapids an island 9 miles long, strewn with gneiss boulders and shaded with magnificent timber. During the dry season the Caveri is reduced to a few silvery threads trickling over their rocky beds, but with the return of the rains its cataracts are amongst the finest in the whole world. Then is seen north of the island a stream some 420 yards broad, with a volume at least equal to the mean of the Garonne or Loire, precipitated over a fall fully 300 feet high into a rocky chasm, whence the broken waters rise in spray and mist. Below these cataracts the Caveri, hemmed in between the projecting spurs of the Nilghiris and Shivarai, escapes from the highlands through a series of abruptly winding gorges. Then, swollen by the rivers from the Nilghiris and Palghat depression, it meanders over the plains, ramifying at last into the innumerable branches of the delta, some of which are old channels of artificial origin.

Like the Palar, the Caveri has shifted its chief branch. The arm which has retained the name of the river continues to follow its normal easterly direction towards Karikal. But the Kolerun or Kolidam channel, which carries off the largest volume, trends to the north-east, leaving to the right all the secondary streams which ramify over a tract with a coast-line upwards of 100 miles in extent. The Caveri delta is thus one of the largest in India, and the seaward advance beyond the normal coast-line yields in superficial area only to those of the Ganges and Maha Naddi. But it does not consist exclusively of recent alluvia. Deposits 20 to 30 feet above high-water mark cover the surface of the delta, and these deposits have been deeply eroded by the branches of the river, and intersected by the navigable Buckingham Canal. This fine artificial artery, which has developed a large local traffic,* serves to connect the Kistna with the Caveri delta. The whole of this region seems to have been upheaved several yards, and old islands, fringed by fossil timber, now rise above the gently undulating plain. Eastwards the delta impinges on insular rocks, similar to those forming on the south the Ramesvaram headland. Here the mainland projects towards the group of islets situated on the north coast of Ceylon. But instead of encroaching on the sea by fresh deposits, the old delta formations, like those of the more northern rivers on the Coromandel coast, are being gradually eroded by the surf. To this erosive action of the sea is due the straight line which now replaces the former curve of the coast southwards to Cape Calimere, and thence by a sharp turn westwards to Adrampatam. Even in the roughest weather, safe anchorage is afforded to shipping in the smooth waters of the inlet thus developed at the head of the Gulf of Manaar.

The chief dyke by which the waters of the Caveri are diverted to the canals of the delta, "the Garden of Southern India," is at least one thousand five hundred years old. Yet it is still in such a good state of preservation, that it has served as a model for analogous works constructed lower down across the Kolerun. During

* Shipping of the Buckingham Canal (1878): 268,900 tons; 140,000 passengers.

the rains these dams have to sustain the pressure of a stream at times discharging 332,000 cubic feet per second, but with a mean volume scarcely exceeding 12,000 feet, and the irrigation canals ramify over a tract fully 835,000 acres in extent. Owing to its beneficent character, the Caveri is almost as highly venerated as the Ganges itself, and to the devotee it is known only as the Dakshini Ganga, or "Southern Ganges." According to one local legend it is even a holier stream

Fig. 138.—The Caveri Delta.

Scale 1 : 1,300,000.

0 to 16 Feet. 16 Feet and upwards.

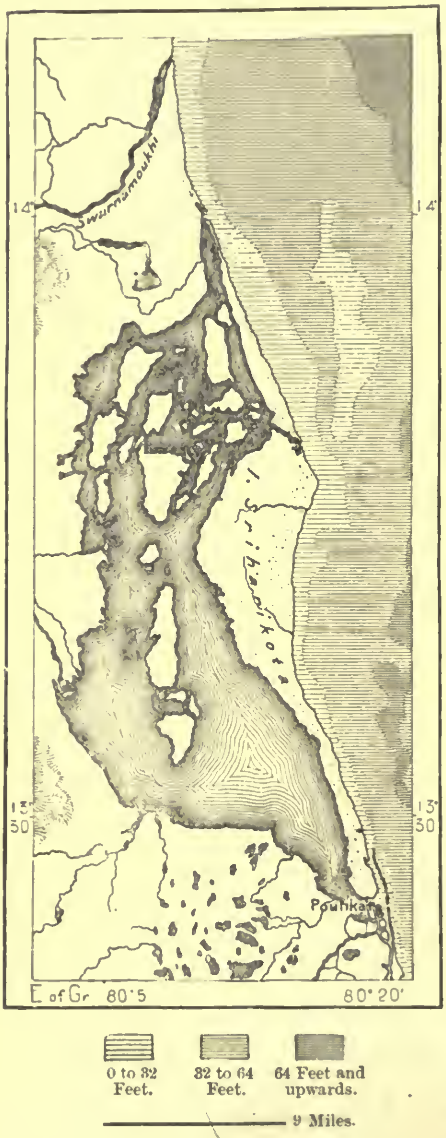
30 Miles.

than its Himalayan rival, which comes every year, by subterranean channels, to renew its virtue in the sacred waters of the Caveri. Hence pilgrims still flock in thousands to bathe at the sources, confluences, and falls of the venerated stream.

At some points of the coast, lying beyond the reach of the fertilising waters, the arid sands and shifting dunes form a striking contrast with the rich plains more favourably situated. Such little desert patches serve to show what the whole

land would become but for the vast system of irrigation that has here been developed. Thanks to these extensive works, most of the Coromandel seaboard is sufficiently watered, and its shores are recognised from a distance by the continuous forest of coconut palms with which they are now fringed. The only serious break occurs between the Palar and Northern Pennar, where for a space of about 36 miles the large Pulicat lagoon is separated by a strip of sand from the sea. This outer edge, and the islets dotted over the basin, yield nothing but jungle, which supplies Madras with much of its fuel. Even on the west side the soil is covered with extensive tracts of saline efflorescences, relieved only here and there by a few villages, with their tamarind groves and cultivated oases.

Fig. 139.—Lake Pulikat.
Scale 1 : 700,000.



Along the Coromandel coast some traces have been observed of upheaval. But the submarine eruption, supposed to have taken place at the end of the last century some 10 miles off Pondicherry, is mentioned only by a single traveller, who speaks of having seen it from a vessel under sail. Nevertheless the aspect of the surface waters would seem to imply that from some still unexplained cause, considerable disturbances occur on the bed of the sea along the Coromandel, Ceylon, and Malabar coasts. At several points are seen stretches of muddy water even in great depths. The waves break against these yellow or red spaces where the surface remains always smooth or slightly undulated. Hence vessels here take refuge as in a port, and these waters are favourite feeding or spawning grounds for multitudes of fish. No marine region deserves more careful study than these turbid islands encircled by clear water. They seem to teem with myriads of animalcula, changing the liquid element almost to the consistency of mud.

Inhabitants.—The Dravidians.

The whole of Southern India is occupied by Dravidian peoples, so named from some southern tribes vaguely mentioned by the old Sanskrit writers. This term

Dravidian, as adopted by modern ethnologists, is now applied to all the populations of the south and central provinces, who speak dialects of a common stock language, differing fundamentally both from the northern Aryan and the Kolarian of the Vindhya Uplands. The Dravidians are not believed by most Indian scientific men to be the true aborigines of the peninsula. Although settled for thousands of years in the country, they seem to be connected by their speech with the Brahuis of Baluchistan,* and to have reached their present homes from the north-west frontier. Gradually driven from the north by the subsequent Aryan invaders, they have become concentrated in the southern regions. To judge from the primitive elements of their speech, they seem to have possessed a certain degree of culture from the earliest times, and before they were brought under the direct influence of the Aryan intruders. They were acquainted with many industries, such as spinning, weaving, dyeing, pottery; they had boats, and even decked vessels, and made use of all the metals except tin, zinc, and lead. They built "strong dwellings" and temples, but could not embellish them with sculptures. They had a knowledge of letters, and traced their characters on the leaves of the palmyra palm. At their feasts the poets sang the national glories, and stirred the people by the recital of their heroic deeds. The invasion of the Dravidian lands is related in the Ramayana epic, and the local legends speak of a civiliser from the north, the sage Agasthya, before whom the Vindhya Hills "fell prostrate" to facilitate his journey southwards. In the belief of orthodox Hindus he still lives, dwelling on the mountain which bears his name, in the Cardamom range, west of Tinnevelli. But whatever personality is to be attributed to this legendary being, Aryan influences had already made great progress before the first arrival of the Greek mariners on the southern shores of the Peninsula; for even at this early epoch most of the cities bore Sanskrit names.

Amongst the various Dravidian tongues current in the southern regions and north of the Kistna, there are four—the Telugu, Tamil, Malayalam, and Canarese—which have risen to the position of literary languages. Telugu prevails on the eastern seaboard, from the Mahendraghiri Pass to Lake Pulikat, and throughout the east of Mysore. Here it is spoken by about fifteen millions altogether, and is also the speech of some colonists settled in the extreme south of the peninsula, as well as of numerous immigrants in Burmah. These Dravidian Telugus have, moreover, given their name of Kalinga, contracted to Kling, to all the Hindus residing in Penang, Singapore, and other parts of the Eastern Archipelago. The Indian colonists, who brought their civilisation to Sumatra and Java, came probably from the Telugu coast. The term Gentu, originally applied by the missionaries to all the "gentiles," or pagans of the Peninsula, is now restricted more particularly to the natives of Telugu speech. Poems, proverbs, tales, make up their primitive literature. The great Sanskrit epics were translated into Telugu as early as the twelfth century, and then began the golden age of this rich and harmonious tongue, the "Italian of India."

Till recently Tamil, or Tamul, ranked next to Telugu, in respect of the numbers

* Lassen, "Indische Alterthumskunde"; Caldwell, "Dravidian Languages."

speaking it; but since the great famine of 1877, which raged especially in the northern provinces of the Madras Presidency, it takes the first position, being current throughout the whole of the eastern slope between Lake Pulikat and Trivandram, and in the northern half of Ceylon. It is the speech of nearly 16,000,000 natives in these regions, and is rapidly encroaching on the Telugu domain in all the towns along the railway routes, and wherever the Europeans are settled in large numbers with Tamil domestics. All the Vishnuite Brahmans of Mysore speak this language, while the Mohammedans chiefly use Hindustani.

Tamil may be regarded as the first of Dravidian tongues, in the surprising wealth of its vocabulary and idiomatic phraseology, as well as the antiquity of its classical literature. Some of its oldest writings date at least from the tenth century, and thousands of Tamil works are now issued by the Madras press. Poems, including those by the Italian missionary Beschi, are very numerous, but they are noted less for vigour of thought than for extreme elegance and artificial refinement of expression. Thus all poetic compositions are required to begin with a word taken from the special list of terms of good omen. Nevertheless, under the influence of the new ideas, Tamil literature is breaking away from the trammels of the past, and more recent works, dealing with contemporary subjects, are characterised by greater precision and a more chastened style. A chair of Tamil was founded in 1881 in the Paris school of living oriental languages.

Thanks to their enterprising spirit, the Tamil-speaking populations constitute one of the main elements of regeneration in the Peninsula. Within their domain are situated Madras, third city of the Anglo-Indian Empire, and Pondicherry, capital of the French possessions. Fond of migrating, they have become the most numerous body in all the military cantonments south of Bombay. To the same stock belong most of the coolies employed in Mauritius, and other colonies beyond the seas; and although the Hindus of Penang and Singapore bear the name of Klings, that is Kalingas or Telugus, they are, none the less, nearly all of pure Tamil blood.

The Dravidians of Malayalam (Malayalim, or Maleolum) speech, who number over 5,000,000 on the Malabar coast between Mangalore and Trivandram, are far more indifferent than the Tamil peoples to modern ideas. Holding themselves aloof from the march of events, they live still in the past, leaving to the kindred races all the commercial positions, fresh pursuits, and emoluments of the present. Of all Dravidian tongues, the Malayalam has been most affected by Sanskritic elements, and is now subject chiefly to Tamil influences.

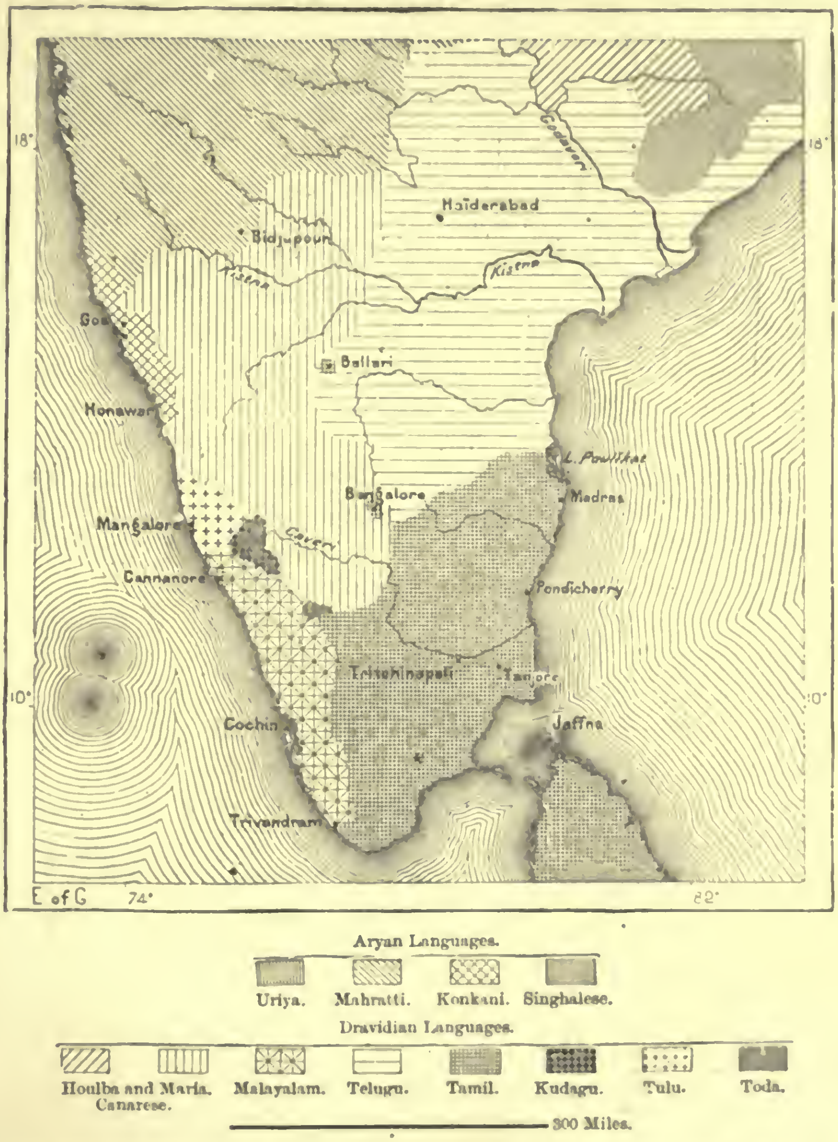
Another of the leading members of the Dravidian family is the Canarese (Kannada, or Karnataka), spoken by about 9,000,000 in the region stretching from Goa and the Kistna southwards to the Nilghiris. But, by a strange misapprehension, the term Karnataka, which probably means "Black Land," and which is applied properly to the rich tracts of the plateau under cotton plantations, has been transferred by Europeans to the Tamil territory along the Coromandel seaboard.

The Tulu (Tuluva, or Tuluvu) of the Mangalore coast is also included among

the literary Dravidian tongues, although it possesses nothing beyond some translations from the Sanskrit, in Malayalam characters, and a few religious treatises in Canarese letters. It is spoken by scarcely more than 300,000, in a small enclave between the Canarese, Malayalam, and Kudagu. The last mentioned is current in the territory of Curg, but, like the Tulu, is destitute of an original literature.

Fig. 140.—Languages of Southern India.

Scale 1 : 12,000,000.



Nevertheless, it constitutes a distinct variety of the Dravidian, as do also the Toda and the dialects of some other Nilghiri tribes. The songs of the Curg peasantry are cheerful and animated, whereas those of the other South Indian peoples are nearly all slow and melancholy.

All the Dravidian tongues present special features, and differ so greatly from

each other that the Tamil, Telugu, Malayalam, or Canarese speaking communities are not mutually intelligible. Including the Dravidians of the Central Provinces and Bengal, such as the Gonds and Oraons, but excluding certain peoples of the Gangetic plains and Himalayan terai, who seem to be of the same stock, the Dravidian linguistic family may be estimated at about 50,000,000 altogether. Beyond the Peninsula this family seems to have no distinct relationship with any other, although it betrays some slight analogy in its structure with the Mongolian, Manchu, Tungus, and especially the Ostiak branches of the Finno-Tataric group. All its varieties have passed from the purely agglutinative to a more or less developed inflecting state. Thus, through conquests and successive migrations, the two great sections of one ethnical domain would seem to have been gradually separated towards both extremities of the continent.

At the same time, an argument for the affinity of all the Dravidians with the races of Northern Asia cannot be built upon a possible resemblance of their respective languages. The "Mongol" type is, no doubt, met amongst many Indian populations, but there are others whose features differ little from those of the negroes, Australians, Malays, Semites, and Egyptians. Peoples of diverse origin may have probably succeeded each other in Southern India, but they have here become so intermingled that it is no longer possible to recover the primitive elements. The great contrasts between ethnical types are produced by climate, diet, social habits, and especially the hereditary influence of castes, even when these were originally based merely on differences of professions. Colour, which varies from dark to pale yellow, or ashy grey, is not a mark of race, for it varies considerably in the same family, according to the individual pursuits. Speaking generally, the complexion is found to be more or less dark, in proportion to the dryness of the climate. The Dravidians of Malabar, dwelling mostly in the shade of large trees, in a region exposed to copious rains, are much lighter than their kindred of the Coromandel plains, which are at once dryer and less wooded. In the same tribe, such as the Shanars, nearly all employed on the coconut plantations, those of Malabar are as fair as Brahmans, while those of Coromandel are dark as negroes. On the whole, the great mass of the Dravidian populations differs in no respects from the Aryans. Yet these intruders from the north cannot have been numerous enough to have imparted their racial type to 40,000,000 of human beings. On entering a court of justice, in a Telugu or Tamil district, presided over by an English magistrate, one is struck by the resemblance of the features, only the Dravidian physiognomy expresses more softness and cunning, the European more strength and determination.

Of all the Dravidians, those most spoken of since the "discovery" of the Nilghiris, are the Todas, or Tudas, a small Canarese-speaking community, who numbered less than 700 souls in 1871, but who, thanks to their seclusion in these uplands, have been enabled to preserve their primitive usages. Their ancient culture, traditionally introduced from the eastern plains of Kanara, some eight hundred years ago, has not been the sole cause of the great attention paid to them. Enthusiastic naturalists have sought affinities for the Todas among the Kelts, "Pelas-

Fig. 141.—Types and Costumes—Group of Todas.

giáns," and other Indo-European peoples. Yet their features differ in no respect from those of millions of other Dravidians, and their complexion is much darker

than that of most natives of Malabar. They are otherwise tall and well-proportioned, though not so robust as they had been described by the first observers. They are of a mild, peaceful disposition, somewhat indolent, and without ambition, but brave and of dignified carriage. As they walk by, wrapped in their "toga," they look almost like Roman senators. Their national name of "Toda" means "Men," but by their neighbours it is taken in the sense of "Shepherds," and their pursuits are, in fact, of an essentially pastoral character. They do not follow the chase, and their only weapon is an iron axe, used exclusively for felling timber. They do not till the land, the natural products of which belong to all in common, for the idea of property is still restricted to the hut, its contents, and live stock. Essentially a pastoral people, their only occupation, almost their only religion, is the care of their cattle. Milk, their chief diet, is the object of a kind of worship. The head milkers, chosen from the class of *peïki*, or "Sons of God," are real priests, practising celibacy, wearing a special garb, and living apart. A sacred cow of illustrious lineage heads the herd, adorned with a bell—a precious object, said to have descended from heaven. After the morning purification, the priest does homage to the venerated animal, and blesses the herd with his white wand.

All the rites of this little community have the same pastoral character. After the death of a Toda, the village herd is driven in procession before the body, then one or two cows are immolated, to accompany him on his long journey. The Makarti crag, which rises abruptly above the western plateau of the Nilghiris, and which is inhabited by a recluse, "keeper of the gate of heaven," is revered as the point of contact between this world and that beyond the grave.

The other Nilghiri tribes are also Dravidians in speech, if not by descent. The Badagars, or "Northmen," usually called Burghers by English writers, are recent immigrants, driven from Mysore by famine and oppression. According to the official returns, they numbered 20,000 in 1871, yet pay a small tribute to the Todas in return for the right of settlement. Agriculturists and worshippers of Siva, they are divided into numerous castes, differing, in other respects, but little from the surrounding lowlanders. The Kotahs, or Gohatars—that is, "Cow-killers"—also pay a tribute to the Todas as the original owners of the land. The Kotahs are the artisans, mechanics, minstrels, and dancers at the feasts of all the other tribes, by whom, however, they are held in great contempt, owing to their uncleanly habits and omnivorous tastes. The Kurumbas, or "Volunteers," are even still more despised, although the Badagars select their sorcerers from this tribe—doubtless because it is supposed to be more familiar with the secrets of nature. According to Walhouse, the Kurumbas formed a powerful confederacy in the fifteenth century, since which time they have lost their old culture. The Irulas, or Eriligarus—that is, "People of Darkness"—who occupy the marshy, wooded tract at the foot of the Nilghiris, are regarded rather as foul animals than human beings. Their neighbours describe them as associating with tigers, to whom the mothers entrust their offspring. The Irulas, who number about 3,000, and the Soligas of the eastern hills, as well as the Kotahs and Kurumbas, speak the Dravidian dialects of the civilised peoples with whom they are in contact.

But they are regarded, rightly or wrongly, as descended from the aborigines, who erected the numerous megalithic monuments scattered over the Nilghiris, the Curg, and Mysore uplands. These monuments, which contain the charred remains of bones, weapons, vases, and ornaments, are in any case attributed by the Dravidians themselves to a previous race, extirpated by their ancestors. They regard these aborigines as the builders of the *Kaddineg*, or ramparts, which intersect the country in all directions. These ramparts are 18 or 20 feet high, and always flanked by a ditch 10 feet broad and deep. In many places there is even a double, treble, or quadruple wall, and a highly picturesque appearance is imparted to these eminences by the large trees by which they are now overgrown. The total length of these remarkable ramparts, erected by a race whose very name has perished, is estimated in Curg alone at over 100 miles.

Beyond the Nilghiri highlands there are some other tribes resembling the Todas and Badagars in their usages, who might also be regarded as representing the aboriginal element. Such are the Koragars, forming the lowest caste of slaves in the Mangalore district, and formerly compelled to wear nothing but foliage as their national dress. Since the establishment of British rule, the men have laid aside this leafy garb, while the women, always more conservative of old institutions, are still draped in intertwined branches. But they have already forgotten the origin of this costume, for it is worn over their woven garments, or trailed behind like a sweeping train. The Koragars are still condemned to dwell under roofs made of boughs, being forbidden to build their huts of earth or stones. Like the Korumbas, they are regarded as possessing a deep knowledge of the mysteries of nature, and able to control the spirits. They eat the flesh of crocodiles, yet their horror of other quadrupeds is so great that even the sight of a four-legged piece of furniture is repugnant to them.*

The Anamalah Hills, which in so many respects resemble the Nilghiris, are also occupied by numerous wild or half-civilised communities. The Kaders, many of whose customs recall those of the Todas, call themselves the "Lords of the mountains," and regard agriculture as dishonourable. But they are rather hunters than pastors, and the other tribes recognise their superiority, without however yielding them obedience or tribute. The Kaders are of small stature, with slightly crisp hair, and are by some anthropologists affiliated to the negritos of the Malay Archipelago, by others to the Australian aborigines. At the time of marriage the young men file the four front teeth to a point, a custom observed also in many other places, and especially in Central Africa. In the Anamalah Hills the Malsars and Madawars form the agricultural castes, while the Paliyars are the graziers and dealers. The Paliyars, who here find a refuge from the oppression of the high-caste lowlanders, present a savage aspect, with their profuse head of hair falling in dishevelled masses down to the hips. Both Paliyars and Malsars display remarkable agility in climbing rocks and trees, scaling vertical heights by means of knotted cords 60 to 80 feet long.

On the Malabar coast the ruling element are the aristocratic and formerly war-

* Walhouse, "Journal of Anthropology," April, 1875.

like Nayars, or Nairs, that is, "Masters," who form eleven distinct castes, and who, while accepting Aryan culture, still jealously preserve some of their national usages. Nowhere else, except perhaps amongst the Garros of Assam, have the old matriarchal forms, the *murru-mukatayum*, been better upheld. Till the middle of the last century Travancore was still governed by princesses, succeeding each other in the female line. A first marriage, performed according to Hindu rites, is merely an official ceremony, on the conclusion of which the husband is dismissed with a few presents for his complaisancy. Then the bride resumes her complete freedom, simply wearing the *tali*, or symbolic string, round her neck in compliance with the law. Henceforth she is at liberty to choose her own partner in life, although public opinion would not tolerate her living with the first husband. Nor has the second any domestic right, the authority remaining with the wife, who exercises it even over her brothers. In every family, power is thus represented by the mother and eldest daughter, whose pleasure is executed by the maternal uncles and brothers. The fathers, always regarded as strangers, are welcomed in the domestic circle, of which they are not virtually members. Children look far more to the maternal uncles than to the father, even when they may have been brought up by him, which is rarely the case. The uncle "gives them food," and bequeaths his personal effects, in return for which the nephews owe him all their affection.

The land is handed on from mother to eldest daughter, and is tilled by all the brothers for the common benefit. Those who have no sisters, consequently no legal heirs, must become adopted as brothers by the daughter of another family. The Nayar women, who enjoy such special privileges, are generally handsome, intelligent, well instructed, and consequently enjoy great influence in the community. The greatest misfortune that can befall a family is the necessity of being compelled, by stress of fortune, to sell the "matrimonium;" hence the family group struggles vigorously against poverty, and is rarely driven to such extremities.

The Namburi, or Brahmans of Malabar, who favour the matriarchal customs of the Nayars, are held in contempt by their northern brethren, and regarded as belonging to an aboriginal caste. Probably of non-Aryan origin, they are gradually diminishing in numbers. But they still retain their power, and their rules, ironically spoken of as the "sixty-four abuses," are still the law of the land. Whatever be their faults, the Namburi have at least one virtue, that of perfect veracity. They answer questions put to them with great deliberation, always scrupulous to tell the exact truth in all respects.

Most of the numerous immigrants settled on the Malabar coast are considered by the Nayars as too inferior even to have the right of addressing them. Yet these "haughty Nayars," of whom Camoens speaks, are themselves classed by the Brahmans only as Sudras, and are regarded as the kinsmen of the agricultural Vellalars of the Coromandel coast. But they are so tenacious of their privileges that no one dares to resist them. They are preceded by criers to clear the way, and serious diplomatic difficulties have even been caused by Englishmen using routes which the Nayars had reserved to themselves. During the Portuguese rule the question of precedence between Nayar and Portuguese was fought out in single

combat, and decided by the fortune of arms in favour of the stranger. The Tirs, or Tayars, that is, "Islanders," who are supposed to be of Singhalese origin, are compelled to stand thirty-six paces off, lest their masters should be polluted by their shadow or odour. Yet the Tirs are far from being a degraded caste like the Parias. Of lighter complexion, and more symmetrical form, than the Nayars themselves, they have earned by their energy and intelligence a respectable social position, and the government schools are now thronged by their children. The practice of polyandry is still continued by the Tirs, as well as by the castes of cabinet-makers, metal-casters, smiths, jewellers, and the Poliyar peasant element. Several brothers or members of the same tribe hold one wife in common, and the inheritance passes undivided to all the children of the community. In the Madura territory, where this system has been preserved by many tribes, the husbands must always be of some even number—2, 6, 8, or 10; and in Travancore the children are distributed amongst the husbands according to the order of birth.

The Moplahs, who form the most energetic and enterprising element in Malabar, are also of foreign origin, at least on the paternal side. According to the tradition, a shipwrecked Arab crew settled in the Cochin territory in the ninth century of the new era. These were soon followed by others, who intermarried with the Tirs and other low-caste tribes, and from these unions the present Moplahs claim descent. In any case Arab traders were counted by tens of thousands on the Malabar coast when the Portuguese first landed in India. The Hindus being prohibited by custom and the religious prescripts of the southern Brahmans from trading beyond the seas, the new arrivals were well received as agents for the foreign exchanges, and their colony was increased by numerous converts eager for change and adventure. At present the Moplahs, with whom should be grouped the Labbais of the Coromandel coast, number at least 800,000 souls.

Of graceful carriage, shapely and robust, they form one of the finest races in India; and in enterprise, daring, and perseverance know no superiors. To them the Malabar seaports are indebted for their prosperity; and fully conscious of their worth, they feel little disposed to be bullied by the Nairs, with whom they come into frequent collision. Those engaged in agriculture do not always submit to the burdensome conditions imposed on them by the landed proprietors, and when the time comes to assert their rights, they prepare for the struggle by making a preliminary offer of their lives. The resolution once taken, the Moplah, whom his friends already proclaim a martyr, celebrates a farewell feast, effects a divorce with his wives, and passes his last days in prayer. Being thus prepared for death, he recognises no more laws, enters the Hindu temples, breaks the statues of the gods, and falls on every Nair in his path, neither granting nor craving quarter. Occasionally, when a community suffers any real or fancied wrong, all the young men devote themselves to death, and then whole battalions have to be sent against them. If the other populations of India showed half the energy of these half-caste Mohammedans, the Europeans would never have succeeded in making themselves masters of the country.

The Christians, sometimes called "Nazarene Moplahs," also form a considerable

element amongst the peoples of Southern India, where are centred about two-thirds of all the Christians in the Peninsula. According to the tradition, the "white Jews," or "Syrians," arrived on the Malabar coast in the very first century of the new era. Taking the route by Yemen and the island of Socotora, they were followed in a few years by the real Jews, the "Yudi Moplah," as they are called, whose half-caste descendants still survive in the Cochin district. Another legend, of Portuguese origin, refers the beginning of the Christian communities in Southern India to the preaching of St. Thomas the Apostle, who is supposed to have landed close to Cranganore. At Quilon a column was, till recently, shown, said to have been erected by the apostle, and his pretended tomb is still to be seen to the south of Madras. But whatever truth there may be in these legends, the "Nazarenes" found on the Malabar coast by the chaplains of Vasco de Gama had no notion either of the Roman church or the Pope. Professing Nestorian doctrines, they were forthwith denounced as heretics, and called upon to accept the true faith. In the Portuguese possessions the Inquisition ultimately succeeded in bringing them within the pale of the Church, but in the native states most of the Nazarenes maintained or resumed their peculiar organization and practices, which varied in almost every community. Being dependent on the patriarch of Babylonia, who resides at Mossul, they still use Syriac as the language of their liturgy, although even their most learned priests no longer understand the meaning of the sacred text. In one of their villages the faithful are said to have been in the habit of writing their mortal sins on scraps of paper, with which a bamboo cannon was charged. The gun was then fired and all the sins of the people scattered to the winds.*

Formerly the Syrian Christians constituted a high caste, and to them appeal was in all cases made by the jewellers, metal-workers, and carpenters, who regarded them as their natural protectors. They alone shared with the Brahmans and the Jews the privilege of travelling on elephants. At present they have proselytes in all classes, and chiefly amongst the low castes. Yet even community of faith has utterly failed to efface the original social distinctions.

Most of the inhabitants of Southern India belong to the Hindu religions, the Lingaïte sect of which is found more numerously represented in Mysore than elsewhere. These sectaries, who are recruited chiefly among the Dravidian trading and industrial classes, are specially noted for their freedom from most of the Brahmanical superstitions. They have even abolished caste, if not in their social life, at least in their religious ceremonies, and do not hesitate to eat together, whatever be their position or origin. But traces of the primitive religions still also survive everywhere amongst the more secluded populations of Mysore, Madura, and Coromandel. Most prevalent is the cult of the "six demons," the "seven phantoms," and the innumerable good and bad, Brahman or Pariah, spirits, including even the English genii. Along all the approaches to the villages are seen little mud pyramids erected to the aerial spirits, who are worshipped especially with offerings of fruits, flowers, corn, and occasionally poultry. In some places

* Fr. Day, "The Land of the Permauls."

the angel guardians are summoned at sunset with beating of drums, and called upon to protect the houses against the nocturnal demons.

A few sanguinary rites still recall the old sacrifices, as amongst the Wakligas of Mysore, near Nandindrug, and the Kallans, or Kolleries, of Tanjore. Before solemnly investing their eldest daughters with earrings, the Wakliga mothers are obliged to have the two first joints of their ring and little fingers chopped off by the village smith. Till recently the Kolleries had the horrible practice of killing one of their offspring in front of an enemy's house, in order to bring down misfortune on his family. In order to avert his evil fate, the person so accursed was compelled in his turn to sacrifice one of his children. The Nayadis, or Yanadi, of the island of Sriharicota, east of Lake Pulikat, and on the Malabar coast, are one of the most degraded of all Hindu communities. An old nail, a spear-head, or any other bit of pointed iron was, till recently, preserved as the most precious of objects, and fire was obtained by the friction of two pieces of wood. They were even more despised than the Pulayers or Puliyas, whose very name is derived from the word *pulu*, or *foul*. Before the year 1865 the Pulayers were forbidden to wear clothes on the upper part of the body, they spoke of themselves only as "slaves," and of their children as "apes" or "calves."

The Nayadis of the Calicut district, Malabar, recently became a sort of bone of contention between the Christian and Mohammedan missionaries. The latter prevailed, and the Nayadis are now claimed by the Moplahs as followers of the Prophet. On the other hand, Christianity has found most favour among the Ilavas (Yiravas) of Travancore, the Billavas of Cochin, and the Shanars (Sanars, Saners) of Madura, who are probably of the same origin as the Tirs of the Malabar coast. Of half a million Shanars nearly 100,000 call themselves either Protestants or Catholics. They live almost exclusively on the produce of their palmyra palms, forty to sixty of which trees are required for the support of each family.

Topography.

Mangalore, or the "Happy City," which the natives call *Kandial*, is the capital of South Kanara, and one of the most frequented ports on this inhospitable coast. According to Ibn-Batuta, as many as 4,000 Arab merchants were settled at this place in the middle of the fourteenth century. Hidden, like all Malabar towns, amidst its coconut groves, Mangalore lies on the edge of a lagoon into which the two rivers, Netravati and Gurpur, discharge their waters, and which is accessible to the Arab *dhows* and native *pattamars*. Formerly the naval arsenal of Haidar Ali, Mangalore has again acquired an exceptional importance as an entrepôt for the coffee grown on the plantations of Curg. It is also a chief centre of missionary activity, and since 1834 it has been the headquarters of the Basle mission, which employs numerous converts in its printing-office and other industrial establishments. Several valuable documents on the peoples and languages of the surrounding regions have been published by the members of this mission.

Cannanore or *Kannur*, lying on the coast some 15 miles south of the Dali or

Delli headland, is another Malabar town famous in the history of trade and religion. Here the Portuguese had already established a mission and a factory before the close of the fifteenth century. But although the nearest outport of Mysore and the South Curg plantations, Cannanore has the disadvantage of communicating only by steep and difficult routes with the interior, and, like Mangalore, it is accessible only to light craft. The *Bibi*, or "Queen," who resides at Cannanore, belongs to an old dynasty, which no longer possesses any territory on the mainland. But the British Government has allowed her to retain a certain jurisdiction over half of the Laccadive Archipelago.

Tellicheri, lying farther south, is a large place, and also exports coffee, besides pepper, cardamoms, and sandalwood.

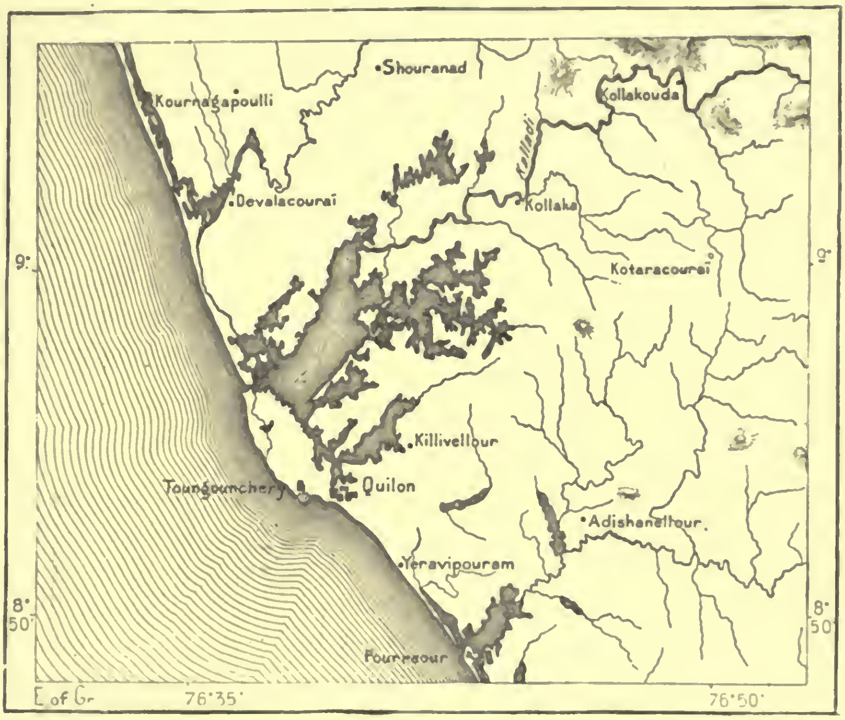
About 4 miles still to the south is the little port of *Mahé*, the ancient *Maihi*, which was seized in 1726 by Mahé de la Bourdonnais, from whom it took its present name. This French settlement, which has an area of scarcely 1,500 acres, was three times captured by the English, and finally restored by them, after razing its fortifications. A little factory, 5 acres in extent, in the town of Calicut, also belongs to the French.

Calicut, or *Kolicotta*, is the largest city on the Malabar coast, although from the sea little is at first seen except its coconut plantations and a few huts grouped round a lighthouse. When the Europeans presented themselves before this place in the fifteenth century, it was the capital of a Nair confederacy, and residence of the tamutiri (sumuri or zamorin)—that is, "ruler of the sea." Covilhão, the first Portuguese envoy, arriving by the route through Egypt, became the guest of the king, and twelve years thereafter Vasco de Gama cast anchor in the roadstead—the most memorable event in the history of India since the Macedonian expedition. Calicut suffered much at the hands of the strangers whom it had so hospitably welcomed. In 1501, 1502, and 1510 it was bombarded by Cabral, Gama, and Albuquerque, and it was, later on, burnt and plundered by French, English, Danes, and other Europeans. It was also repeatedly sacked by the rajas of Mysore, and when seized at the end of the last century by the English it had just been destroyed by Tippu-Sultan. Since then it has been repeopled and enriched, although most of its trade is carried on through *Beipur*, with which it is connected by a succession of suburbs and plantations stretching 6 miles along the coast. The port of Beipur is separated from the sea by a bar with 13 feet at low water, and according to Bastian, some of the seafaring population of this place are of Chinese descent, hence known as Chini-bechegan, or "Sons of the Chinese." Its chief exports are the auriferous ores of Wainad, coffee from the Nilghiris, teak floated down by the Panna-poya, or "Golden River," and various produce forwarded to the coast by the Madras railway. But the "calicoes," which take their name from Calicut, are no longer produced here. South of Bombay, Beipur is the only town on the west coast which communicates by rail with the opposite side of the Peninsula. But the line which at present runs by the Pal-ghat gap, between the Nilghiri and Anamalah Hills, is to be continued to Calicut, and will eventually replace the carriage route now connecting the Malabar seaports. About 5 miles east of Beipur

lies the old burial-place of *Chatapuramba*, or "Field of Death," which is strewn with dolmens, known in the district by the name of "navel-stones."

The ancient *Kodungalur*, the *Cranganore* of European writers, was at one time the rival of Calicut. Here reigned the dynasty of the Nair Permauls; here were the chief communities of the Jews and Syrian Christians settled on the Malabar coast, and here the Portuguese erected a fortress, which was afterwards captured by the Dutch. The prosperity formerly enjoyed by this place is sufficiently explained by its situation on the only emissary of the extensive lagoons which stretch southwards to the promontory of Quilon. Similar navigable channels have conferred

Fig. 112.—Quilon.
Scale 1 : 400,000.



6 Miles.

equal and even greater prosperity on other places, such as *Cochin* (*Kochi*, *Kochibandar*), that is, the "Little Port," which lies at the point where the lagoons communicate with the sea through a broad passage over 12 feet deep at low water. Being unable to obtain a permanent footing in Calicut, the Portuguese withdrew to Cochin, where Gama founded a factory in 1502, and where Albuquerque erected a fort the very next year. Here Gama died, here was built the first European church, and here was printed the first book in India. At Cochin there is still a Jewish community which has not yet entirely forgotten the Hebrew language. But although at once an English town and the capital of a native state, few Europeans have settled in this place, which is exposed to the dangerous malaria

arising from the surrounding swamps and lagoons. But the nervous complaints, dysentery, and elephantiasis, prevalent along the coast, cease altogether 9 miles inland.

At present the most frequented seaport on this part of the Malabar coast is *Allepi*, or *Alapalli*, which lies to the south of Cochin at the southern extremity of the longest lagoon on this seaboard. Here the landlocked waters are connected with the sea by an artificial channel, while the different quarters communicate by means of a tramway drawn by elephants. Although the roadstead is protected by no projecting headlands, safe anchorage is afforded by one of those already described isolated enclaves of smooth and turbid waters, which are dotted over the sea along the west coast of India, but which naturalists have hitherto failed to account for.

Although of less commercial importance than Allepi, the seaport of *Quilon*, which stands at the foot of a rocky bluff, is the chief military station of Travancore. In mediæval documents the name of this ancient town occurs under the forms Kaulam, Kollam, Colon, Colamba, and Columbum. It is the *Coilum* of Marco Polo, and was at one time a chief outport for pepper, ginger, and the brazil-wood (*Cæsalpinia sapan*), which afterwards gave its name to the Portuguese possessions in South America. The era of Travancore dates from the rebuilding of this city, in the year 1019 of the Christian era. Quilon communicates with Tinnevelli by a carriage road, which crosses the Cardamom hills, and which will soon be replaced by a railway, with a branch line running to *Trivandram*, capital of the native state of Travancore.

A sandy plain, 5 miles wide, separates this place from the sea, which is here so exposed that few vessels venture to cast anchor in the roadstead. Trivandram covers a large space, partly on a low-lying tract fringed with marshes, partly on laterite hills, rising from 50 to 200 feet above the plains. The citadel, which lies in the lower quarter, is surrounded by an old wall, enclosing the royal residence and a celebrated temple of Vishnu, especially remarkable for the profusion of its wood carvings. Here are numerous schools and an observatory, besides a rich museum of architecture and natural history. The surrounding district supports a large population engaged chiefly in the cultivation of areca, palmyra and coconut palms. These plantations are very extensive, and, according to the Travancore returns, contain upwards of twenty-two million trees. A hundred plants suffice to support two families, yielding all that is needed for housing and clothing them, and supplying many objects of luxury. The natives enumerate eight hundred and one different ways of utilising the wood, fibre, leaves, sap and fruit of the *borassus flabelliformis*; and, according to the local proverb, this tree "bears fruit for a thousand years."

On the eastern seaboard the population is centred chiefly in the well-watered tracts, and especially in the Caveri basin. The regions of the plateau and Pennar valley are but thinly peopled, and here the population has been further reduced by the famine of 1877. *Cuddapah*, near the south side of the Pennar, derives some importance from its cotton-mills. But the largest place in this district is the ancient town of *Nellore*, which lies on the alluvial plain not far from the coast. It

has no seaport, nor is it connected by rail with the Indian system; but it now communicates with Madras by a recently-constructed navigable canal. Nellore is regarded as the literary capital of the Telugu linguistic domain, and here have been found some coins of Trajan, Hadrian, and Faustina.

Madras, capital of the great Southern Indian Presidency, and, next to Calcutta and Bombay, the largest city in the Anglo-Indian empire, is by no means one of those places whose future greatness might have been foreseen by its very

Fig. 143.—Madras.
Scale 1 : 140,000.

geographical position. Possibly the Palar formerly reached the sea near this point; but it has long been deflected far to the south. Nor does the uniform seaboard anywhere offer the least natural shelter to shipping. The sea is even far more dangerous here than on the southern shores of the Peninsula, being frequently swept by terrific cyclones, which scarcely ever visit the Pondicherry waters. In one of these storms the French fleet, commanded by La Bourdonnais, was ship-

wrecked three weeks after the surrender of the citadel. It is to be regretted that the factory of *Armagom*, founded by the English 40 miles farther north, on the strip of sand fringing the east side of Lake Pulikat, was not retained by the Company as its chief station in this district. At this place, which is known also as *Blackwood's Harbour*, a large sandbank affords protection to large vessels in 30 feet of water close in shore. But the beach was, unfortunately, here too narrow to afford room for the development of a great city. Apart from the heights of St. Thomas, the district surrounding Madras contains none of those natural curiosities which attract visitors in crowds, and thus tend to become populous industrial and trading centres. Marco Polo speaks of *Mailapur*, still a suburb of Madras, as "a small town where there is very little merchandise and which is of difficult access." Its subsequent prosperity is due entirely to the choice made of it as an administrative capital. Having thus become the converging-point of highways and canals, and, later on, of the southern railway system, its artificial advantages have gone far to compensate for its natural drawbacks, and to become a rival of Calcutta it has hitherto lacked nothing except a good harbour. In the middle of the last century its population was roughly estimated at one million; but the first regular census of 1871 reduced that extravagant calculation to less than 400,000 for the city and all its suburbs. Even at the next census of 1881 that figure was found to have been increased only by a few thousands.

If Madras does not rank with the great cities of the world for the number of its inhabitants, it covers a space as large as that of many places three or four times more populous. From the Adyar estuary, forming its southern limit, it stretches for 8 miles along the beach to its northern suburbs, and occupies a total area of nearly 30 square miles. Much, however, of this space consists of fields, surrounding hamlets, or isolated villages. The most populous and commercial quarter is Chennapatnam, or "Black Town," commanded on the south by Fort St. George, which comprises extensive esplanades and some government offices, but is of no strategical importance. Beyond the river Kuam, which is cut off from the sea for the greater part of the year, the Triplicane quarter extends a long way southwards in the direction of the suburb of St. Thomé, the ancient Mailapur, from which it is separated by some intervening lagoons. Farther inland, several other distinct quarters, isolated from each other by open spaces, gardens and reservoirs, are occupied each by a particular caste. There are few remarkable monuments in Madras; but most of the houses acquire a dazzling whiteness from the *chunam*, or peculiar stucco, with which they are covered, and which rivals the finest marble in appearance. Besides the museums of architecture and natural history, the College contains the valuable Mackenzie collection, one of the most important in India for historical and ethnographic studies. The observatory, which lies to the west beyond the limits of the city, is the starting-point for the triangulation of Southern Asia, and regulates the time of the stations on the various railways. Through this observatory passes the meridian of India, which, like that of the old Hindu astronomers, intersects the island of Ceylon, or "Lanka." *

* Latitude, 13° 4′ 6″ N.; longitude, 80° 17′ 22″ E. of Greenwich.

MADRAS—VIEW TAKEN FROM THE PIER BEFORE THE CONSTRUCTION OF THE HARBOUR.

Notwithstanding its exposed position, Madras takes the third rank amongst the cities of India in respect of its trade as well as its population. The annual arrivals and departures amount on an average to 3,000 large vessels, with a tonnage of two and a half millions, and the exports consist chiefly of coffee, sugar, indigo, dyes, oleaginous substances, cotton, and colonial produce, in exchange for European wares, especially woven goods and metals. The famine of 1877 caused a temporary increase of about one-third in the year's transactions. Formerly Madras was of such difficult access that the shipping had to anchor about a mile from the beach, while the passengers and merchandise were brought ashore through the surf in catamarans or masulas made of mango-wood, protected by coconut matting from the shock of the waves. Now, however, a pier over one thousand yards long enables large vessels to approach the shore and land their cargoes. But such is the violence of the surf, that this structure was twice demolished by collision with the shipping. Since 1875 an artificial harbour has been in progress, which will form a vast rectangle over one thousand yards on all sides, and affording safe anchorage to large vessels in about 40 feet of water. The works have been more than once interrupted and partly swept away by cyclones.

At 6 and 9 miles south-west of Fort St. George, which is regarded as the official centre of Madras, there stand two syenite eminences, known as the Great and Little Mount St. Thomas, where the Apostle of that name is traditionally said to have lived as a recluse. A Portuguese church, erected on the higher and farther removed of these heights, contains a cross with a Pehlvi inscription, dating from the seventh or eighth century. But the sanctuary, of which Marco Polo speaks as being equally venerated by Christians and "Saracens," seems more probably to have stood on the lower hill at Mailapur.* Near this spot is situated the residence of the Governor, which is noted for its fine gardens. But the railway running to the west, and then to the north-west of Madras, towards the Mysore plateau, leads to some other shrines, which are visited far more frequently than the chapel of St. Thomas. Over 100,000 pilgrims yearly alight at the *Tirutani* (*Tritani*) station, in order to pay their devotions at the neighbouring temple of Siva; and the faithful flock in still larger numbers to *Tirupati* (*Tripati*). Here the temple consecrated to one of Vishnu's incarnations crowns a peak nearly 2,000 feet high, which is encircled by other crests, all alike destitute of vegetation. The path winds for a distance of 6 miles up the side of the hill, and passes under three gateways, through which no European was permitted to enter before the year 1870. Notwithstanding the offerings of the devotees, the Tritani temple is a very unornamental structure, of wretched workmanship. The most remarkable monuments in the neighbourhood of Madras are the "Seven Pagodas," and the sacred caves of *Mahabalipúr* (*Mahamalaipuram*, *Mavilipur*), or, the "City of the Great Bali," which lies on the coast some 30 miles south of Madras. Here rises like an island in the midst of the sandy plains a small granite mass, whose slopes are pierced with grottoes, some rudely carved, others disposed in the form of temples approached through porches and colonnades. At some distance from the shore, and in the midst of some reefs,

* Col. Yule, "The Book of Ser Marco Polo."

which the natives believe to be the ruins of a submerged city, there stands a pyramidal pagoda over against two more modern sanctuaries consecrated to Vishnu and Siva. Here also a long granite ridge has been completely carved within and without in such a way as to form five detached temples. Besides the famous Kailas at Ellora, these are the only examples of such a style of architecture in India. They date from various periods between the sixth and fourteenth centuries of

Fig. 144.—Territory of Pondichery.
Scale 1 : 300,000.

the vulgar era, illustrating in their colonnades, sculptures, and inscriptions the successive Buddhist, Jaina, and Dravidian schools of art.

The river Palar, which flows to the coast near the ancient city of *Sadras*, a little to the south of the Seven Pagodas, waters the rich district of *Vellore*, a fortress famous in the military annals of the last century. It is still a thriving commercial town, whereas of the still more famous *Arkot*, former capital of the Carnatica, little

now remains except its ruined mosques and tombs. A more important strategic position is the European town of *Ranipet*, which commands the left bank of the Palar. Farther east, but still in the Palar Valley, lies the large city of *Conjevaram*, which is connected by the *Chingle-put* branch with the main Coromandel coast-line. Here are some large pagodas, one of which, 180 feet high, is the loftiest in Southern

Fig. 145.—Pondicherry.

Scale 1 : 700,000.

2,200 Yards.

India. In 1780 Haidar-ali laid siege to a British army of 25,000 men, which had entrenched itself within the precincts of the great temple of Conjevaram. From the summit of the sculptured pyramid, Mount St. Thomas, distant nearly 20 miles to the north-east, is visible in clear weather.

Between the Palar and Pennar, or Southern Ponear, the largest place on the coast is the French city of *Pondicherry* (*Pondu-cherri*, or *Pul-cherri*)—that is, the

"New Village"—which high-caste people call *Pondu-nagar*—that is, "New Town." Of all the possessions preserved by France from her ancient colonial empire in India, this is by far the largest and most important. Purchased in 1693, by Commander Martin, to replace St. Thomas, which had just been seized by the Dutch, this little paria village rapidly increased in size, and during the greater part of the eighteenth century Pondicherry was the centre of a flourishing export trade. Captured by the English, it was not restored till 1816, and then only on condition of no fortifications being erected, or any armed force, except the police, maintained in the territory, which has, moreover, been parcelled out in the most eccentric fashion. Up to the very gates of Pondicherry British enclaves have been reserved, suitable for the erection of batteries. In one place the road belongs to the English, while the ditches lie within French jurisdiction; in another, a tank depends on Madras, the districts watered by it on Pondicherry. The whole of the territory thus strangely distributed covers a space of 628,000 acres, of which about two-thirds are under cultivation. Most of the land not occupied by roads, villages, tanks, and canals is planted with cotton, indigo, rice, bananas, palm-groves, and other trees.

When this territory was restored to France, it had a population of about 25,000. This has since been doubled in the city, and increased sixfold in the rural districts; but the Europeans, exclusive of the *topas*, or half-castes, scarcely number 1,000 altogether. The "white town," which skirts the shore, is laid out in streets at right angles, from which the houses are generally separated by little enclosures, planted with flowers. Beyond this quarter an extensive district stretches along the north coast and towards the interior, where the native houses are almost buried in a dense growth of coconut palms, tamarind, acacia, and tulip-trees. The route leading from the heart of the city, for 6 miles, to *Villenur*, is skirted the whole way by a succession of houses and plantations. Some fine parks, and a garden of acclimatisation, also contribute to the salubrity of the atmosphere. But towards the south the Gingy, or Ariancupom River expands into unhealthy lagoons, which, during the dry season, are cut off from all communication with the sea.

Pondicherry is now well supplied with good water from seven Artesian wells, sunk at depths of from 80 to 570 feet. Few English cities of the Indian lowlands can compare in cleanliness and good management with "Old Pondy," as the natives are fond of calling it. But being surrounded by a dozen custom-houses, and possessing few local industries, its trade is far from rivalling that of many Anglo-Indian towns of like size. Yet it has the advantage of lying on a coast far less surf-beaten than that of Madras, and never exposed to cyclones. The shipping is also protected by an iron pier over 600 feet long, while the roadstead has been lit up since 1835 by a lighthouse, the first erected on the east coast of the Peninsula. In 1879 a railway, constructed mainly at the expense of the colony, brought Pondicherry into the Peninsular system. The chief industries of the place are the preparation of tobacco for the market, spinning, and weaving. As many as two hundred hands are employed in one of the local spinning-mills, and four thousand looms are at work in the territory, where many of the natives speak French much

better than English is spoken by the indigenous inhabitants of the Anglo-Indian towns.

Gudalur or *Cuddalore*—that is, the "City of Confluents," is so named from the two rivers, Guddilam and Paravanur, which here reach the coast during the rainy season. It lies about 15 miles south of Pondicherry, and comprises a European and a native quarter. Some 3 miles to the north-east are the ruins of *Fort St. David*, which was the capital of the British possessions for the six years ending in 1752, and which was captured by the French in 1758, and again in 1782. *Porto Novo*, or *Feringhi-pet*—that is, "Frank town"—which follows next in succession to Gudalur on the Coromandel coast, lies 9 miles north of the town and famous temples of *Chedambaram*, or *Chilambram*. Here the chief monument is the "Golden Shrine," a vast group of buildings dedicated to Siva, and surrounded by a wall nearly a mile in circumference. Four *gopura*, or "gates," of eight stories lead to the inner courts; and mirrored in the sacred tank is the "Temple of a thousand Pillars," an enormous pile resting on a forest of columns, of which nine hundred and seventy-four are still erect. The visitor is struck with amazement at the stupendous labour represented by these structures, whose granite blocks are often 40 or 42 feet long. Yet the nearest quarries are at a distance of 36 miles from the temples. As many as eighty thousand pilgrims and traders flock to the fair held in December at this place. In no other district of equal extent are to be seen more monuments, remarkable alike for their wealth, their fine proportions, and rich sculptures. At *Mayaveram* and *Khumbakonam*, on the railway to Tanjore, are also to be seen some of these superb sanctuaries, famous throughout India as amongst the "seven wonders" of the Dravidian world.

These pagodas are not far from the northern branch of the Caveri delta, and lie within the basin of this river, which rises 300 miles farther west, on the eastern slope of the Curg uplands. One of its headstreams washes the foot of the hill on which stands *Mercara*, capital of Curg, pronounced by Clements Markham to be the pleasantest city in Southern India. The more famous stronghold of *Seringapatam* (*Srirangapatam*, or "City of Vishnu"), formerly capital of Mysore, lies on an island covered with paddy-fields and sugar-cane plantations. The fortifications erected by Tippu-Sultan have remained just as they stood after their capture by the English in 1799, only their picturesque aspect has been increased by the trees and twining plants by which the breaches in the walls are now overgrown. Seringapatam was not restored to the Mysore rulers, but owing to its unhealthy climate, it has been abandoned as a military cantonment. At the end of the last century five hundred French Creoles from Mauritius, in the service of Tippu, nearly all perished of fever, and the population of the island is scarcely one-tenth of what it was in the last century.

The present residence is *Mysore*, which stands on higher ground about 10 miles south-west of Seringapatam. But the administration has its headquarters at *Bangalore*, on the east of the principality, near the British frontier. Situated at an elevation of 300 feet, Bangalore is considered the healthiest place in the state, and thousands of Europeans have settled here. One of the quarters, with

Fig. 146.—Khumbakonam—Chief Gopura of the Temple.

its churches, villas, museum, park, and gardens, has quite the aspect of an English provincial town. The natives are occupied chiefly in the manufacture of

carpets, cotton, and silk fabrics. Bangalore has a considerable trade in corn and cotton, which cannot fail to be further developed as soon as the new lines are opened, bringing it into connection with the South Indian railway system. One of these lines will run to *Hasan*, a town lying on the east slope of the Ghats, near a pass leading down to Mangalore. In the neighbourhood of Hasan are seen some of the most profusely sculptured temples in the whole Dravidian domain. For a space of over 600 feet round the walls of the *Halebid* sanctuary, the friezes superimposed one above another are covered with figures of elephants, tigers, horses, oxen, birds, and symbolic animals. These little figures, carved with surprising perfection, are reckoned by the thousand, and present a most striking

Fig. 147.—The Gold Mines of Wainad.
Scale 1 : 275,000.

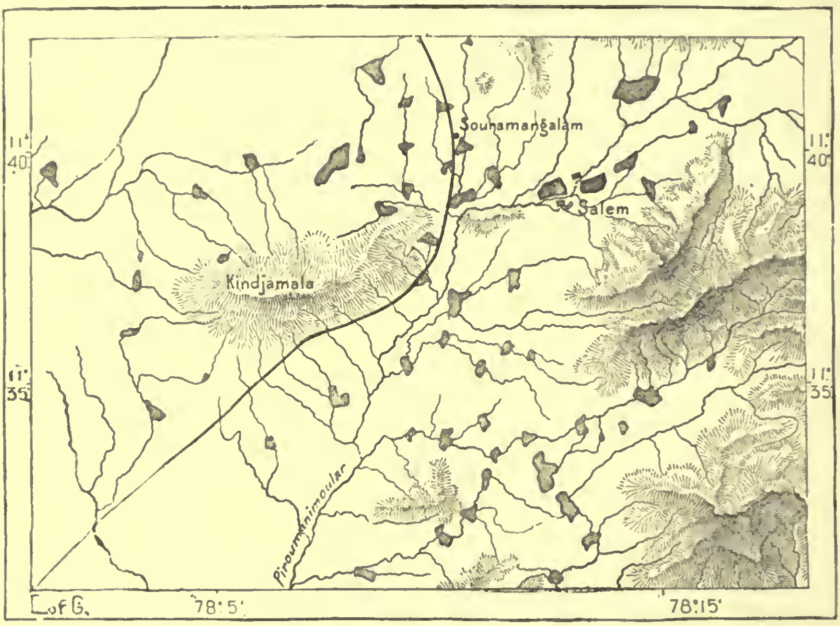
contrast with the recumbent bull, 90 feet long, guarding the northern entrance of the temple.

South of Mysore, *Utakamund*, capital of the Nilghiri district, and the chief sanatorium in Southern India, is of recent foundation. Yet its villas, houses, and hotels already cover a considerable space at a mean elevation of 7,300 feet above the sea. On the east rise the steep slopes of Dodabetta. *Kotaghiri* (*Khotagherry*), *Konnur*, and the other English settlements in this district have acquired great importance as centres of culture for exotic species. At Utakamund there are as many as three acclimatisation gardens, at different altitudes on the slopes of the plateau. Here the first cinchona plants were imported from Peru in 1860, and in two years twenty-five thousand of these trees were already flourishing in the neighbourhood. Now extensive cinchona forests have replaced the grasses and jungle of the plateau, and supply the Anglo-Indian army with an abundance of

bark. Nevertheless, in the Nilghiris the chief plantations are those of coffee, which since 1840 have gradually spread over the slopes, between the altitudes of 2,600 and 5,000 feet. Farther north, still finer coffee is grown in the Wainad district, whose rich gold mines, formerly abandoned by the natives, have again been opened. The chief mine lies in the neighbourhood of *Devala*, 26 miles south of *Manantawadi*, capital of this district.

The town of *Palghat*, which commands the *Ghat* or pass of like name, connecting the Nilghiris with the Anamalah Hills, was formerly a place of great strategic importance, and has now become a flourishing commercial entrepôt. But the largest place in this region is *Coimbatore*, which also lies on the route and railway connecting Beipur with Madras. Here converge the frequented routes leading

Fig. 148.—Salem.
Scale 1 : 300,000.



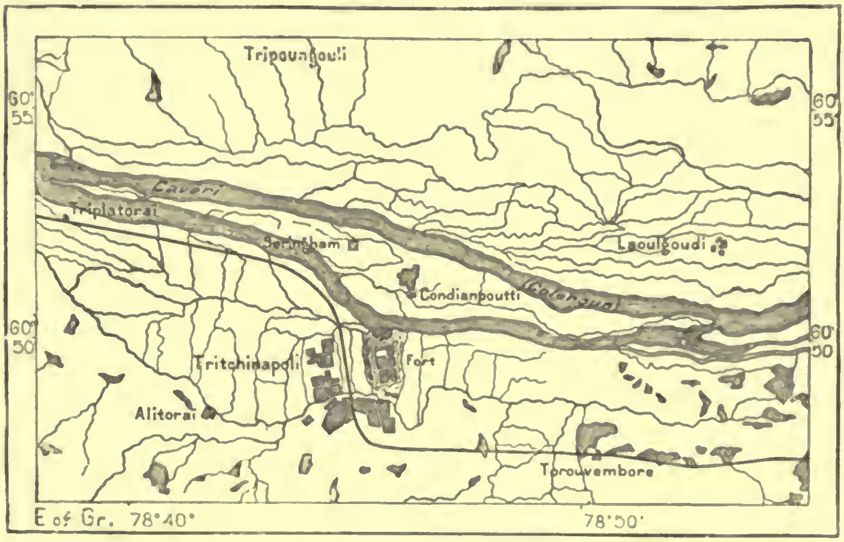
down from the opposite heights of the Nilghiris and Anamalahs, and in the vicinity stands the temple of *Perur*, one of the most venerated in India, and one of the three which were spared by the Mohammedan fanatic, Tippu-Sultan. But Coimbatore has now been outstripped by the flourishing town of *Salem* (properly *Chelam*, or *Selam*), which lies to the north-east in a rich plain, watered by two hundred reservoirs, and producing rich crops of cotton, indigo, and tobacco. The low hills in the neighbourhood yield an iron ore, from which is made an excellent quality of steel. Coffee culture has also been introduced into the valleys of the Shivarai Mountains, which skirt the Salem plain on the north-east. Here is the little health-resort of *Yerkad*, 4,350 feet above sea level.

Trichinapoli, the largest city south of Madras and Pondicherry, stands at the

extremity of the Caveri delta, whence diverge the irrigation canals fertilising the rich rice-grounds, palm-groves, and tobacco-fields of this "garden of Southern India." The citadel, whose walls have recently been demolished, encloses a granite mass 270 feet high, on which stand a temple of Siva and some other buildings. This was one of the most warmly-contested strategical positions during the Anglo-French wars of the last century. In an island of the Caveri, farther north, stand the lofty *gopuras*, or pyramidal gateways of the fine temple of *Srirangam* (*Seringham*), which was held for some years as a stronghold by the French. According to the original plans, this temple, which is dedicated to Siva, and which dates from the first years of the eighteenth century, was to have no less than 20 gopuras, each presenting the aspect of complete monuments. In the same neighbourhood is another magnificent sanctuary, also dedicated to Siva. Such twin structures,

Fig. 149.—District of Trichinapoli.

Scale 1 : 320,000.



6 Miles.

consecrated to the two great deities of the Hindu pantheon, are characteristic of Southern India.

Tanjor or *Tanjarur*, which lies east of Trichinapoli, near the centre of the delta, was formerly the capital of the Hindu state of Chola, or Chora, a name recognised by most etymologists in the word Coromandel. Tanjor is an industrial town, whose jewellery is no less famous than that of Trichinapoli. But its chief celebrity is derived from a temple dating from the fourteenth century, which, although not the largest, is the finest in Southern India. The *vimara*, or chief pyramid, which rises to a height of 200 feet, and which is crowned by a monolithic dome, consists of 13 stories, supported by a cubic base, with two rows of superimposed columns. The characteristic motives of its decorative work are sculptured fans, probably intended to represent the tail of the peacock, a sacred bird in Hindu mythology.

One of the neighbouring sanctuaries, dedicated to Subramanya, son of Siva, is still more remarkable for its graceful forms and elaborate details. But for the profusion of these sculptured details, this edifice might be taken for a work of the Italian Renaissance. Scarcely less famous than that of Tanjor is the temple of

Fig. 150.—Rock of Trichinapoli—View taken from the East.

Manargudi, which lies to the south-east, and which is also ranked amongst the "seven wonders."

Owing to the dangerous and exposed character of the coast along the east side of the delta, most of the export trade of this fertile region is carried on through Madras. Nevertheless, much produce is now forwarded by the Trichinapoli-Tanjor railway to *Negapatam*, whence it is shipped mainly to Rangun, Ceylon, and Singapore. This export trade is chiefly in the hands of the Labbais, a half-caste Arab community, settled in the delta. Negapatam, or "Snake Town," known to the Greeks by the name of *Nigamos*, was one of the first places occupied by the Europeans, passing successively from the Portuguese and Dutch to the English.

Some 12 miles farther north, on a mouth of the Caveri, lies the French settlement of *Karakal*, which ranks next in importance to Pondicherry.* The port is accessible to vessels of two hundred tons burden, which here ship rice for Ceylon, France, and Réunion, in exchange for lumber and European wares. Although not connected with the railway system, Karakal has continued to prosper; while *Tranquebar*, or Taragambadi, has lost all its trade since the completion of the line to Negapatam. Tranquebar was for over two centuries, from 1616 to 1845, a Danish factory, which, with Serampur, was sold to England for the sum of £20,000. Here was founded the first Protestant mission in India.

South of the Caveri basin, *Madura* was long the metropolis of Southern India, and at one time famous as the capital of the Pandyas, or Pandions (Pandiya mandalam), who are mentioned by the Greek geographers, and who sent two envoys to Rome. According to the local records, Madura was founded by immigrants from the north in the fifth century of the old era, and at the beginning of the Christian era it was already the chief centre of literary life in the Peninsula. At that time instruction was obligatory for all children over five years old, who were duly inscribed in the public registers and enrolled in their district schools, at the foot of the statue of Ganesa, God of Wisdom. Madura probably takes its name from the holy city of Muthra, or Mathura, on the banks of the Jamna, and the same designation is supposed to have been extended to the island of Madura, near Java, by the Hindu missionaries in the Eastern Archipelago. This old city, partly restored and drained by the English, has preserved some relics of its past greatness, amongst which a pagoda, whose unfinished portal and nave are scarcely surpassed for splendour and boldness by any similar works in the Peninsula. The palace also, which dates from the first half of the eighteenth century, is the crowning glory of civil architecture in Southern India. A master-hand from Europe is traditionally said to have directed the erection of this palace, in which the Hindu style, with its excessive mythological sculptures, is chastened by a more correct Moorish taste.

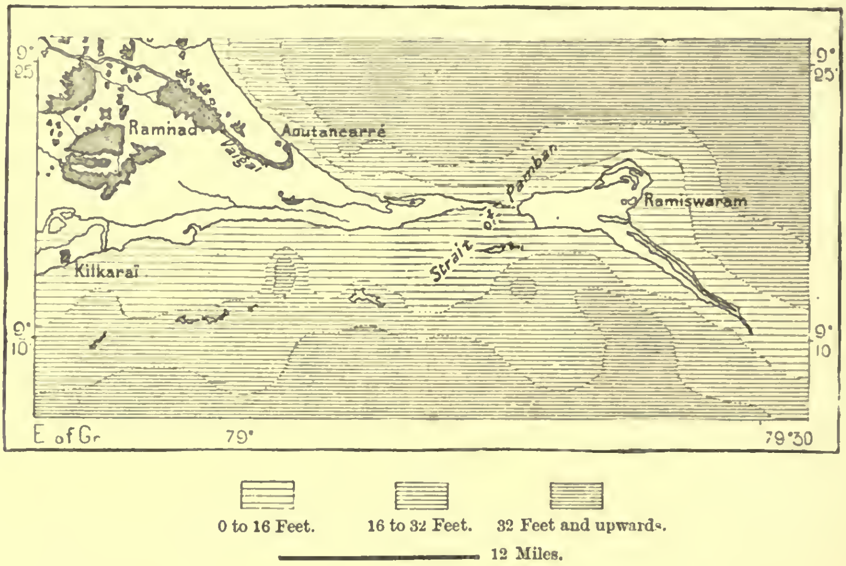
Madura communicates by rail on the one hand with *Dindigal*, on the other with *Tinnevelli*. Dindigal formerly occupied an important strategical position at the foot of a fortified eminence, commanding the routes east of the Palni Hills. Tinnevelli, capital of the southernmost district on the mainland between Cape Comorin and the "Fisheries," lies near the river Tamrapani nearly opposite the twin city of Palamkottai. While the former retains the title of capital, the centre of the administration has been transferred to the latter, and the European residents in both withdraw in summer to *Kutallam*, which stands farther west, near the falls of the upper Tamraparni. Towards the east, Tinnevelli is connected by a branch line with *Tuticorin*, or *Tuttukudi*, which lies on a low shelving beach, where the shipping is obliged to lie at anchor 2½ miles from the port. A Portuguese and Dutch factory in succession, Tuticorin is the only town in India in which, besides Goa, nearly half of the population is Christian. Some of the neighbouring villages are exclusively inhabited by Catholic communities, constituting the caste of

* Area of the Karakal territory, 40,450 acres; population (1872), 61,880.

Paravars, who were formerly occupied chiefly with pearl-fishing. But this industry has been completely abandoned since the sandbanks have altered the direction of the marine currents in the roadstead. The flourishing export trade which this place enjoyed under the Portuguese rule had dwindled to a little coast traffic, when it was again revived by the completion of the railway system to the extremity of the Peninsula. Tuticorin now exports cotton, coffee, and spices, and supplies large quantities of cereals, horses, and cattle to Ceylon. There is also a considerable passenger traffic with the same island.

The tract enclosed by the main railway line from Malabar, and the Negapatam and Tuticorin branches, comprises the native state of Pudukotta, inhabited almost exclusively by agriculturists. But the famous old principality of Ramnad is annexed as a *Zamindari*, or fief, to the British possessions. The city of *Ramnad*, or *Ramanathapuran*, so named in honour of the god Rama, lies in a district studded

Fig. 151.—Bridge of Ramnad.
Scale 1 : 750,000.



with artificial reservoirs, at the neck of the triangular peninsula, which projects eastwards between the Gulf of Manaar and Palk Strait, and which is continued towards Ceylon by a chain of islets and reefs. The Prince of Ramnad bears the title of Setu pati—that is, "Lord of the Bridge"—and, according to the legend, the founder of his dynasty was placed here to guard the passage between the island of Rameswaram and the mainland. The caste of the Maravars, or "Robbers," of whom he was the head, and who from their usages are by many supposed to represent the aboriginal element, was composed of a warlike peasantry, bound to rally at his first appeal to arms. Within eight days he could raise from 30,000 to 40,000 men, all provisioned and ready for the campaign. Hence the "Lord of the Bridge" was much feared, and for several centuries his power was felt over a large part of the Peninsula. On Ramnad are dependent, on the south,

the ports of *Mutapet* (*Port Lorne*), where the most sheltered anchorage might be provided on this coast, and *Kilkarai*, which seems to have been the residence of the Pandya dynasty; on the north, *Autancarrai* (*Attankarai*) and *Deripatam*. The fishing and seafaring populations of this district are mostly either Mohammedans, Labbais, or Catholics.

The peninsula of Ramnad, which now terminates at Point Ramen, was still continued, as late as the fifteenth century, by a line of blocks 1½ mile long towards

Fig. 152.—Pamban Channel.
Scale 1 : 37,000.

the island of Rameswaram. It appears, both from tradition and the records of the Rameswaram temple, that the tutelar deity was solemnly carried, thrice a year, to the mainland, on which occasions the pilgrims followed the now ruined causeway, which had been entrusted to the safe keeping of the "Lord of the Bridge." This

natural roadway was partly destroyed by violent storms in 1480 and subsequent years, after which the vain attempt to struggle with the waves was finally given up. All that now remains of the causeway consists of two lines, running parallel but at different heights, for a distance of about 400 feet. The blocks forming the northern ridge, which is the highest, are visible at low water, when they are seen to form a continuous chain. A few points only of the southern ridge rise above low-water level. The blocks, some of which, according to local tradition, were brought from the mainland to repair the ravages of the sea, are surprisingly regular, and weigh on an average from ten to twenty tons. The material is a sandstone, much more durable than the rocks of like formation lying on both sides beneath the surrounding sands. This great "bridge," assuredly one of the most remarkable geological formations in the world, consists evidently of a hard vein of rock, which has held its ground, like a natural pier in the open sea, after all the softer formations surrounding it had become decomposed and deposited as sand-banks in the neighbouring waters. But the bridge is at last beginning in its turn to give way. At the beginning of the present century a channel opened at the east end of the pier, near the village of Pamban, already afforded access to light craft from the Coromandel coast. It had a depth of nearly 4 feet at low water, and about 7 at the flood. Since 1838 gangs of convicts have been employed in blowing up the rocks and dredging the channel, which now presents a navigable opening 1,400 yards long, 80 wide, and 14 feet deep, between the Gulf of Manaar and Palk Strait. The town of *Pamban*, at the western extremity of the island of Rameswaram, is inhabited by sailors, pilots, divers, and dealers trading between Ceylon and the mainland.* Towards the centre of the island stands the temple of like name, traditionally said to have been founded by Rama, but really dating only from the sixteenth and seventeenth centuries. It is a stupendous pile, portions of which rival the most perfect monuments of Dravidian art. The galleries, with their sculptured columns surmounted by groups of men and animals, are no less than 1,100 yards long; but the artistic effect is completely destroyed by thick coatings of mottled stucco covering all the exquisite carvings.

The islet of Rameswaram, southernmost limit of the Hindu domain, is connected with Ceylon by the ridge of sandbanks supposed to be the remains of the causeway which, according to the legend, was built by the ape Hanuman, to enable the army of Rama to pass over. But the Mohammedans and Christians, rejecting as impious the Hindu mythology, have renamed the "Bridge of Rama," "Adam's Bridge."

* Shipping of Pamban Passage, 1879, 2,143 vessels of 228,100 tons.

CHAPTER XVI.

CEYLON.

ALTHOUGH always regarded by the English as a distinct region, and consequently endowed with an independent administration, the large island of Ceylon is geographically none the less a simple dependence of the Peninsula. A slight change of level in the surrounding waters would suffice to connect its northern extremity with the Coromandel coast, just as by the reverse movement the Anamalah Hills and neighbouring uplands would form a second Ceylon with the encircling plains. The Hindus have always looked on the island as belonging to the mainland, and one of their two epic poems tells how both became united by a bridge thrown over the waters by the gods. The astronomers, like the poets, also regard them as one domain, connected by the same meridianal line, which passes through Mount Meru, culminating-point of the Himalaya, and the sacred peak of the island.

The names of Ceylon are also of Hindu origin, with the possible exception of Lanka, which, however, according to Emerson Tennent, may have been given to it by the Brahmans in the sense of "Resplendent." Tamraparni, or "Bright as Copper," which the Greeks changed to Taprobane, was applied also to Madura in Southern India; and this epithet still survives in the name of the river watering the plains of Tinnevelli. Lastly, the terms Ceylan, or Ceylon, employed by Europeans, and Serendib, used by the Arabs, are merely corruptions of the old Sinhaladvipa, or simply Sinhala, that is, "Island of Lions." There are certainly no lions in the island, but the term has been explained as referring to the northern conquerors, by whom the natives were subdued. In any case, so intimate are its relations with the mainland, that Ceylon may be regarded as still preserving certain features of ancient Hindu history. Its inhabitants, mostly immigrants from the continent, have remained more faithful to the old usages than those from whom they are descended. In Ceylon, or in the upland Himalayan valleys, that is, at either extremity of India proper, must still be sought the remains of the Buddhism which was at one time the religion of all civilised Hindus. Many gaps in the Brahmanical records have also been filled up by the Singhalese literature.

Our first knowledge of Taprobane was derived from the writings of Onesicritus,

a companion of Nearchus in the Macedonian fleet, and from Megasthenes, envoy of King Seleucus. But as so often happens in the history of discoveries, the island acquired exaggerated proportions in the mind of the early navigators. The difficulties attending its circumnavigation, the necessity of making great circuits during the monsoons, the presence of reefs stretching far seawards on both sides of the northern extremity, combined probably with the confused reports which represented Ceylon, Java, and Sumatra as one and the same region, all tended to attribute an enormous extent to the Indian island. It was thus converted into a sort of Antichthon, or Antipodes, establishing in the southern waters an equilibrium to the northern world. Even Marco Polo, with whom begins the period of modern exploration, gives it a circuit of 2,400 miles, or nearly four times more than the reality, which, with the neighbouring islets, scarcely exceeds 650 miles. But he adds that since ancient times the circumference had diminished one-third, and the encroachments of the sea involving such a loss of space are by him attributed to the fury of the northern monsoon.

Ceylon had also been converted by the early navigators into a land of marvels. For the Chinese it was in a pre-eminent sense the "island of Treasures," for the Greeks the "land of Rubies," and the Arabs, contrasting its wooded shores with their own arid seaboard, related how, after the expulsion from the Mesopotamian Paradise, our first parents were allowed by the divine mercy to enter a second Eden—the enchanting island dominated by Adam's Peak. Like the sailors of the Arabian Nights, the first European mariners tell that before the land is sighted its presence is revealed by the perfumes wafted on the breeze. Ceylon is doubtless a very delightful abode, especially for those arriving from the shores of Africa or Arabia, or from the marshy regions of the Sandarbans, Orissa, and the Godaveri. Nevertheless it has more than one rival among the lovely islands of Malaysia and the West Indies, while, notwithstanding its fertility, mineral wealth, and happy position between two seas, it is surpassed even by British India in the relative importance of its trade and population.

The form of Ceylon has often been compared to that of a pear, with its stem end pointing north-west towards the Caveri delta. The south central position is occupied by the highlands, round which nucleus of crystalline rocks the land falls regularly towards the coast. The uplands approach nearest to the sea in the south-west corner, where the headlands advance at some points into the water. The crests, however, present on the whole a certain parallelism, running nominally south-east and north-west, in which direction also flow the streams of the intervening valleys. These highlands resemble the Nilghiris and Anamalah Hills, both in their geological formation and in the mean altitude of their peaks. Pedrotallagalla (8,260 feet), the culminating-point, is not much lower than the Dodabetta and Anamudi, while several other summits rise above 6,600 feet. The Nuvera elia plateau, which is everywhere encircled by hills, has a mean elevation of over 6,200 feet. Pedrotallagalla, which occupies the centre of the system, is concealed from the inhabitants of the surrounding plains by other peaks of nearly equal elevation. Hence it is not regarded with the same veneration as the sacred Samanala, which

is first sighted by mariners approaching the west coast, and which the Mohammedans have named Adam's Peak. By the Buddhists it had been called Sripada, or "the Foot Print," their master having traditionally left the mark of his foot on the topmost crag, where is now shown an artificially enlarged and rudely cut hollow in the rock. A few yards lower down, a perennial spring indicates the spot where the saint, leaning on his staff, was wont to contemplate the universe. The slopes are overgrown with rhododendrons 35 or 40 feet high, whose flowery branches shoot upwards, "as if to draw near the sacred imprint."

Geology.—Minerals.—Hydrography.

The northern half of the island consists almost entirely of a vast plain intersected only by a single ridge projecting from the central mass north-eastwards in the direction of the port of Trincomali. The lowlands are also broken by a few isolated hills, such as Mahintala, which overshadows the sacred city of Anarajapura, while basalt formations crop out here and there near the coast. In the highlands the prevailing formation is gneiss, and many of the spurs consist of a single mass of this material, whose sharp edges have been rounded off by atmospheric influences. Some of these blocks, rising 600 or 700 feet above a rocky plateau several square miles in extent, developed dome-shaped canopies affording a shelter to Buddhist sanctuaries. The gneiss of Ceylon, like that of Southern India, and like the trap formations of the Dekkan, becomes decomposed to a red dust, which covers the surface of the land. The term *Cabuk* has been applied by the natives to these laterites, whose vivid colour presents a striking contrast to the intense verdure of the vegetation. On their first arrival travellers are struck by the reddish tint of the roads and fields caused by this "copper-coloured" cabuk, whence possibly the island derived its Hindu name of Tamraparni.

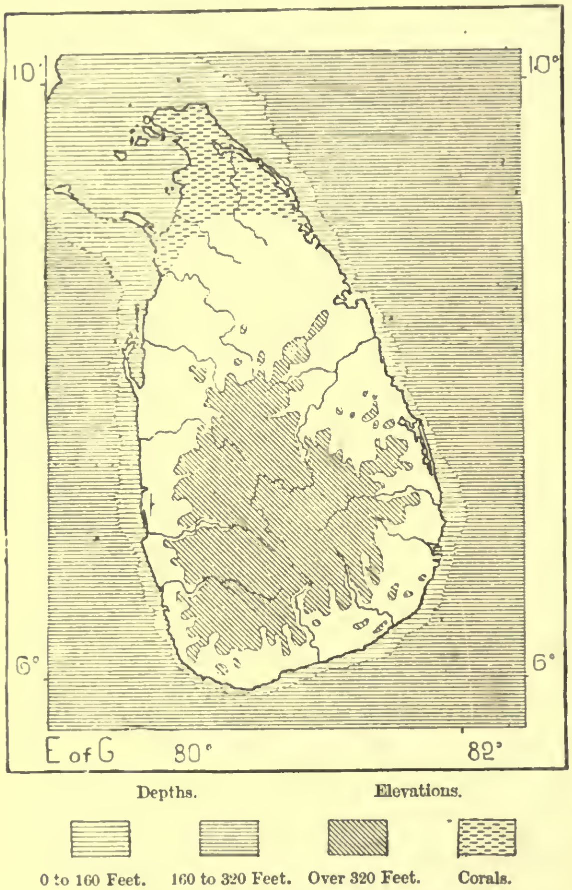
Except iron, the Ceylon rocks contain few metals in considerable quantities. Although numerous, the auriferous deposits are not rich, and have attracted but few workers. Graphite, however, affords an article of export, and there are few regions in which the precious stones are found in such abundance. The rivers flowing to the south coast, and especially those watering the plains of Ratnapura, "City of Rubies," wash down such a quantity of rubies, sapphires, and garnets, that in some places the ground is almost entirely composed of their dust, which is used by the lapidaries for polishing their gems. But these alluvial lands yield no fine rubies, which must be sought below the sands, and under the gravel and clay strata. Here are the crystalliferous beds of *nellan*, which are supposed to be older than the basalts cropping out here and there, and which contain the choicest crystals. Before the arrival of the English the natives had never taken the trouble to attack the rock itself, where are found the largest and most brilliant stones. Garnets, and especially the variety known as Cinnamon-stone, are so common that whole masses of gneiss are sometimes found thickly encrusted with these crystals. In ancient times the sapphires and topazes of Ceylon were the most highly prized of the thirty-seven varieties of precious stones collected by the geologist Gygax. But

notwithstanding the statements of the old geographers and more recent Arab writers, no diamonds have ever been discovered in the island.

Of the rivers flowing from the central uplands in all directions to the coast, the great majority are mere torrents, dangerous during the rains, at other times dry watercourses. Some few are navigable by light craft in their lower course between their mouths and the first rapids. Yet several take the name of *Ganga*, as if they claimed comparison with the sacred Ganga flowing from the Himalayas. The Mahavelli-ganga, or "Great River of sand," one of whose branches falls into Trincomali Bay, although the largest, is only 130 miles long, and drains an area of scarcely 4,000 square miles; yet its basin comprises over two-thirds of the central uplands.

Fig. 153.—Highlands and Coral Limestones of Ceylon.

Scale 1 : 5,420,000.



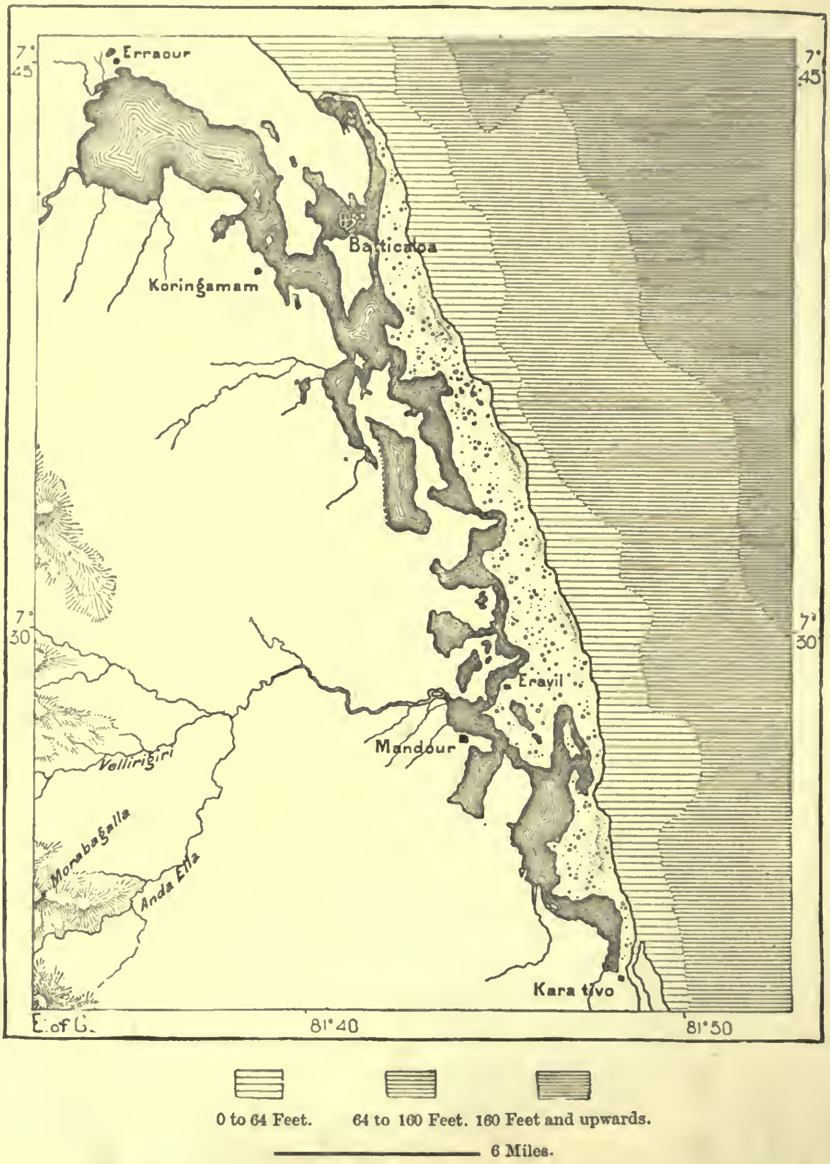
Most of these *gangas* and *oyas* are closed at their mouths by strips of beach, which are formed by the fluvial deposits arrested by the marine currents. Thus are developed within these tongues of sand, extensive lagoons, which receive the streams flowing from the plateaux. One of these *gobbs*, as they are called, stretches for a distance of 30 miles along the east coast, north and south of Batticaloa. Like the backwaters of Malabar, it forms a navigable and perfectly sheltered highway. Owing to the proximity of the hills, and the more rapid slope, the gobbs are less numerous on the west coast, although several have been developed north and south of Colombo. The island of Calpentyn may, on the whole, be regarded as a long strip of beach enclosing a large inlet, which narrows gradually southwards, and which for a distance of some 30 miles is little more than a reservoir. Most of the east coast is fringed with dunes, thrown up by the current, which here flows alternately north and south, according to the direction of the winds. These dunes soon become fixed by the trailing roots of *spinifex squarrosus*, or "great beard of Rama," after which the consolidated slopes are converted into coconut plantations,

Fig. 154.—Landscape in Ceylon—View taken from the Ramboda Plantation.

for which they are admirably suited. Those covering the Batticaloa dunes on the east coast have a total length of over 40 miles, varying in width from one to three miles.

The northern section of Ceylon is composed entirely of decomposed corals. For 10 or 12 miles inland, the plough everywhere turns up oyster-shells and other bivalves, besides crustaceæ of the same species as those now inhabiting the neighbouring waters. This fact was well known to the early Arab navigators, who

Fig. 155.—The Batticaloa Lagoon.
Scale 1 : 870,000.



explained it by supposing that after leaving the sea certain members of the crab family became petrified. This region has evidently been slowly upheaved, and, as on the Negombo coast farther south, it is strewn with decomposed limestones mingled with shells and other jetsam, which have been gradually changed to a

solid conglomerate. In 1845 an anchor was found near Jaffna of such a size that it must have belonged to a larger vessel than any now capable of navigating these shallow waters. The northern extremity is continued north-westwards by a small archipelago, which has also been recently upheaved. The island of Manaar itself has had the same origin, although on the land side the Pamban causeway was, a few centuries ago, again partly swept away by the fury of the waves.

According to the Hindu legend, Manaar was born with Rameswaram, at the time of the conquest of Ceylon by Rama. It is now separated from Ceylon by a winding channel about a mile wide, but not much more than three feet deep at low water. Hence it would be very difficult to convert it into a navigable strait accessible to large vessels. But the Bridge of Rama, which connects Manaar with Rameswaram by a partly upheaved bank 30 miles long, offers here and there a few

Fig. 156.—Bridge of Rama.
Scale 1 : 950.000.

deeper openings; and should the British Government decide on cutting a large navigable canal between Ceylon and India, this line would probably be adopted. According to the monsoons the sandbanks shift north and south, although the marine currents are not very strong either in the Gulf of Manaar or in Palk Strait, along the west coast of Ceylon.

In the island of Rameswaram, as well as on all the coralline coast of North Ceylon, extensive underground reservoirs lying below the reefs are filled with fresh water. By sinking wells through the coral rock, deep cavities are met in several places, in which the water stands always at the same level as the neighbouring sea,

rising and falling with the tides, which here vary from 2 to 3 feet. In the deeper wells the fresh water rests on a brackish layer, which at its lowest depths is thoroughly saline.

Climate.—Flora.—Fauna.

The climate of Ceylon resembles that of Southern India, but is more equable, thanks to the marine atmosphere everywhere encircling the island, and to the regular aerial currents, which follow the rotation of the earth. The mean temperature of the coast towns is about 82° F., and although over 200 miles farther from the equator, the northern districts are the warmest,—thanks to the low level and sandy nature of the soil, and to the neighbouring Coromandel coast, whence come the dry hot winds. Cyclones are very rare, and throughout the year the atmospheric currents are so regular that they may be safely anticipated long in advance. From month to month the temperature varies little, and, as in the Eastern Archipelago, an almost perennial spring is varied only by the distribution of the rainfall. The Colombo district, and all the south-western slopes of the uplands, are exposed to the moisture-bearing south-west monsoons; while the opposite side of the island depends for its supply on the north-east trade-winds from the Bay of Bengal. From the records taken at over one hundred meteorological stations, the mean rainfall would appear to be about 80 inches, diminishing gradually northwards, and ranging from 38 inches at Manaar to 230 inches at Padupla, on the west slope of Adam's Peak. For weeks together the Nuver elia uplands are wrapped in fogs during the rainy seasons.

Apart from a few particular species, the flora of Ceylon closely resembles that of the neighbouring mainlands, and many of its forests recall those of Java in their main features. In these forests several plants are now acclimatised which have not succeeded in India. Amongst them are the nutmeg, the mangustan, the durian, introduced by the Portuguese in the sixteenth century, and European fruit-trees, which however thrive too vigorously to yield good blossom or fruits. In 1856 Tennent enumerated 2,670 phanerogamous plants, of which there are probably at least 3,000; yet the forests are far more remarkable for the luxuriant growth than for the variety of their species, especially on the moist south-western slopes. Here flourish some fifteen varieties of the palm, including the Egyptian dhum (*hyphane Thebaica*), which attains twice the size and far greater exuberance of foliage, fruit, and flower than the parent plant of the Nile Valley. All the villages have their coconut avenues, and enormous baobabs grow on the island of Manaar, where they were introduced by the Portuguese, or Arabs from Africa. In the virgin forests teak is rare, the most useful timbers here being ebony and the *Chloroxylon Swetenia*, besides the bamboos and ratan palms, which often shoot up to a height of 250 feet, with perfectly regular stems scarcely an inch in diameter. With these slender and pliant stems are formed graceful suspension bridges, almost indistinguishable from the surrounding vegetation, yet strong enough to bear the weight of porters and even of pack-horses.

Relatively far less varied is the animal kingdom, which is much inferior to

those of India, Malaysia, equatorial Africa, or Brazil. Nevertheless, Ceylon possesses several peculiar species, so that it cannot be regarded as a simple zoological dependence of South India. Elephants, which are now protected by severe laws, have become somewhat rare on the plains, and the number of these animals exported to the mainland has fallen from 1,600 during the five years ending 1862, to 1685 during the eighteen years ending 1880. The tiger and wolf are unknown in the island, peculiar to which are a species of bat, scarcely larger than a bee, and the *hirudo Ceylanica*, one of the smallest members of the leech tribe. Of the three hundred species of birds over thirty are local, and there are eighteen peculiar reptiles, including three genera unrepresented on the neighbouring mainland. Amongst the lizards is one common also to Burma, but which has not yet been found in the intervening region. Several of the fishes are distinguished by remarkable habits. Such is the kavaya (*anabas*, or *perca scandens*), a species of perch, which makes its way for a considerable distance across the moist herbage, and which is even said to climb the palmyra palm. Other varieties of the perch bury themselves in the mud of the tanks and swamps, where they remain without air or water during the dry season. Nowhere are shellfish found in greater variety than on the coast of the Gulf of Manaar, and the finest conchological collections in Europe are formed mostly of species peculiar to Ceylon.

The great resemblance of its fishes and shells to those of Malaysia can scarcely be explained, except by supposing some former geographical connection between Ceylon and the Sunda Islands. Its marine fauna is also allied to that of the Red Sea, which, however, it greatly surpasses in variety, although of more uniform colour. The countless polyps of the Arabian waters are distinguished by their bright scarlet, orange, or yellow tints; whereas in Ceylon the prevailing hue is green. The island itself deserves the title of "Emerald Isle" far more than Ireland, and to their verdant surroundings birds, insects, reptiles, fish, and in general all the lower forms of animal life, have adapted themselves.

Inhabitants.—Veddahs, Singhalese.

Thanks to its fertile soil and thrifty inhabitants the population of Ceylon is increasing. Nevertheless it seems to have been far more densely peopled before the disastrous wars of mediæval times. In the very heart of the inland forests and jungles the traveller is surprised to meet ruined reservoirs and canals, at one time fringed by cultivated lands and numerous towns, but now lost in the wilderness. Of three thousand tanks over one thousand five hundred have been abandoned, including some which now form marshy tracts some 20 square miles in extent. Kalowewa, the largest of all, still partly exists, and near the dam has a depth of 65 feet. But to thoroughly restore it, and distribute its waters over the Anarajapura district, would require an outlay of about £40,000. Various documents of the fourteenth and fifteenth centuries speak of a million and a half of hamlets at that time scattered over the island, and, like the modern villages, built mostly on the dams or in the groves, immediately below the emissaries of the reservoirs. According

to these records, Ceylon must have been as densely peopled four hundred years ago as are at present the alluvial plains of India.

Although the ancient inhabitants have been reduced by wars, famines, and maladministration to probably about one-tenth of their former numbers, there still survive a few aboriginal tribes whose customs recall prehistoric times. The Veddahs, perhaps descended from the Yakkos, who occupied the island before the arrival of the Aryan conquerors, have retained their tribal independence only in the south-eastern districts, and especially in the Bintenne, Badula, and Nilgala forests at the east foot of the Central highlands. A more extensive range is assigned to them by the early travellers, and some of their communities are supposed to have reached northwards as far as the nearest point facing the Coromandel coast. But since the middle of the present century they have been reduced from about eight thousand to a few hundreds, and it may even be doubted whether any pure specimens of the race still survive. In any case the birth-rate is very low, and anthropologists have recently become all the more interested in this primitive people, that it seems destined soon to disappear altogether. According to the testimony of old travellers, the Veddahs never came into direct contact with strangers. Even for trading purposes they entered the villages by night, placing at the doors of the dealers models of the articles they needed, together with some wild honey, or the produce of the chase. They would then retire, and returning soon after at the same hour they brought away the objects left in exchange. Such is supposed to be the origin of the old legend mentioned by the Chinese pilgrim Fahian, according to which the merchants of Ceylon traded with "snakes and demons."

Those members of the tribe that anthropologists have examined are all of low stature, and might even be grouped with the dwarf races.* The head is also of small size, and the cranial capacity at the lowest level of the scale. On the other hand, they are active and vigorous, nor do their authentic photographs correspond with the current descriptions of a repulsive people, with projecting lower jaw, flat nose, small eyes, large and movable ears. Although perhaps a little darker than the Singhalese, they have neither the black complexion nor the woolly hair of the negro. Their culture, however, is still of a rudimentary character, for they build no huts, dwelling under the branches, or in caves, and have no knowledge of pottery. Nomad hunters, they live almost exclusively on flesh, which till recently was eaten raw. They wander about in small family groups, destitute of any political organisation, or even of any definite religious notions. They have a vague fear of the demons, whom they confound with their ancestry; their only ceremonies are rude dances and cries, like those of the Shamans; and all ablutions are carefully avoided, lest their strength should be washed away by the water. According to some recent writers, they can neither count, distinguish colours, nor mark the succession of time. But while these statements have been questioned, it seems established that they are never seen to laugh, in this respect differing from all other peoples.† Nevertheless, their speech differs but slightly from that of

* Mean height of the Bintenne Veddahs, 1·537 metre; women, 1·448 (Virchow).

† Bayley, "Transactions of the Ethnological Society," 1863; Hartshorne, "Fortnightly Review," 1876.

their Singhalese neighbours; hence they have been regarded not as primitive savages, but as the degraded descendants of a civilised race. Notwithstanding their wretched condition, they are even held to belong to a superior caste, and take the title of "Sons of Kings." The practice of marrying their younger sister is also said to have been observed by the rulers of the land, before the arrival of the Hindus. In any case the Veddahs are again becoming civilised. Of their two tribes, one only keeps quite aloof from the Singhalese, the other no longer fearing to hold direct intercourse with their neighbours. They have also laid aside their leafy garb for one of woven materials; they purchase ornaments for their women, and by unions with the Tamil people, the race is becoming gradually transformed. Yet even those who have been baptized by the missionaries seldom, on that account, modify their tribal usages.

The Rodiyas, that is, the "Miry," who number about 1,000 in the western upland valleys, although frequently confounded with the Veddahs, resemble them only in the debased condition in which several of their clans are still found. Till recently they were forbidden to cross the rivers in the ferry-boats, to draw water from the wells, to enter a village, learn a trade, or till the soil. They were obliged to communicate with the rest of the world through the gaolers, and to this lowest of all Singhalese castes the Rodiyas were fain to do homage. Yet even the Rodiyas find others still more debased than themselves; for they hold their heads much higher than the Ambatteyos, the food prepared by whom they would not allow their very dogs to eat. The Rodiyas are mostly tall, with far more regular features than the Veddahs, and amongst them are met the finest women in Ceylon. Although practising polyandry, they never marry their sisters, and call themselves Buddhists. Still the chief object of their worship is the evil spirit, whom they endeavour to propitiate by offerings of fruits, vegetables, and the blood of a red cock. Alone of all the inhabitants of Ceylon they speak an original idiom, unconnected either with the Dravidian, Aryan, or ancient Singhalese tongue.

The bulk of the people concentrated in the southern section of the island do not seem to differ much in physique from the Veddahs. Most of the Singhalese are of low stature, with elongated head, brown or ruddy complexion, always lighter than that of the Tamils, and aquiline nose. In this last feature they differ most from the wild tribes, while strangers are struck chiefly by their distinctly effeminate appearance. This resemblance to the gentler sex is enhanced by their graceful form, smiling countenance, long black hair, carefully frizzled and gathered up like a chignon on the top of the head; lastly, by their feminine costume. They are, generally speaking, very gentle, courteous, hospitable, and honest; but they deeply resent injuries, and although long accustomed to a regular administration, they protest vehemently against the whims or injustice of the authorities. The increased taxes imposed in 1848 caused revolts in every part of the island.

Apart from local differences, the Singhalese are connected by imperceptible transitions with the Dravidians and Aryans, so that it would be difficult to point out any essential difference of features between them and the Hindus. Here and there are seen a few polyandrous households, the surviving remnants of a system

formerly universal in the island. The Singhalese also enjoy a remarkable immunity from certain ailments to which foreigners are subject. All affections of the respiratory organs—such as bronchitis, diphtheria, or consumption—are unknown to the natives, and very rare even among Europeans settled in Ceylon. Those suffering from chest complaints generally find a visit to the island beneficial, while half-castes frequently succumb to pulmonary disorders. Dysentery, rheumatism, and affections of the nerves are also rare among the Singhalese; but they suffer much from miasmatic fevers, and in the inland districts enlargement of the spleen is common among adults.

The Singhalese language, like the race, is of mixed origin. It betrays its affinity to the Dravidian tongues by a number of old terms expressing objects or ideas associated with a primitive culture. But its religious vocabulary is borrowed chiefly from the Pali, and words relating to the arts and sciences from Sanskrit. Thus the Aryan element has greatly prevailed, and Singhalese is now affiliated by philologists to the Aryan stock. Its literature, preserved on palm-leaves, abounds in moral writings, religious hymns, and national ballads. Most of the works, not even excepting grammars and collections of maxims, are composed in verse; and certain Pali poems comprise over half a million stanzas. The *Mahawanso*, the most esteemed of all Singhalese writings, consists of a collection of chronicles comprising the history of all the dynasties between the third and eighteenth century of the new era. While the Hindus of the mainland were renouncing the Buddhist religion, which at one time prevailed throughout the Peninsula, the Singhalese remained faithful to the cult introduced by the missionaries of the "Great Doctrine." Nevertheless, their Buddhism is not identical with that of the Burmese, Siamese, or Tibetans. Isolation and contact with foreign elements have produced a gradual separation of these religious worlds. Certain Brahmanical practices have also been maintained, or have more recently penetrated into the temples of Ceylon. The symbols of Sivaism are met in many sanctuaries, notably at Matura, on the south coast, where they cause little anxiety to the Buddhist devotees. So, also, thousands of converts to Catholicism have practically remained followers of Buddha.*

The northern section of the island is exclusively inhabited by Tamil immigrants, who arrived at various periods, and who differ in no respect from their kinsmen dwelling on the mainland. At the time of the first invasions they were generally known as "Malabars," although they came chiefly from the Coromandel coast. Their numbers still continue to increase, thanks to the peaceful immigration of the Hindu peasantry, who are now the only cultivators of the plains wasted by their warlike forefathers. As the region occupied by them is the most fertile, although hitherto the most neglected in the island, they are probably destined gradually to become the dominant element of the population. In 1871 they represented scarcely more than a fifth of the inhabitants, whereas now they constitute a fourth, and during the coffee harvest the floating population is increased by from

* Approximate population of Ceylon, according to religions (1881):—Buddhists, 1,700,000; Sivaites, 600,000; Mussulmans, 195,000; Catholics, 200,000; Protestants, 45,000.

60,000 to 100,000 of their brethren from Southern India. The so-called "Moors," numerous both in the coast towns and farther inland, are of the same origin as the Moplahs of Malabar and the Labbais of Coromandel, all of whom spring from the unions of Arab intruders with the native women. The descendants of the Portuguese and Dutch, successive rulers of the island, are now mostly half-castes, the former chiefly domestic servants and labourers, while the latter, known as Burghers, constitute the middle class in the towns. These Burghers form the best support of British rule, and from amongst them are mainly chosen the court ushers, notaries, lawyers, and judges. They have forgotten their mother-tongue, whereas the Portuguese half-castes still speak a corrupt Lusitanian dialect. Amongst the foreign residents attracted by trade and the coffee, tea, or cinchona plantations, are some "Kafirs," negroes, Arabs, Parsis, and Malays from Java and other parts of the Eastern Archipelago. From the form of the "outriggers" employed at Point de Galle, and in Malaysia from time immemorial, it is evident that Ceylon had established relations with the Sunda Islands long before Taprobane was known to the Western peoples.

Topography.

Jaffna, or *Jaffnapatam*, capital of the north, lies beyond the coast-line on the sandy coralline island, which projects seawards between Palk Strait and the Bay of Bengal. Defended by a vast pentagonal citadel erected by the Dutch, Jaffna resembles a garden rather than a city. In the midst of its coconut and palmyra palm groves, little is to be seen beyond a few houses with verandahs and terraces. In the district are cultivated seven millions of these plants, and the town itself, peopled for two thousand two hundred years by Tamil immigrants, carries on a considerable local trade. But the roadstead is too shallow for large vessels, which are obliged to stop near Pedro Point, on the other side of the island, or else near the islet of Leyden, some 12 miles to the south-west.

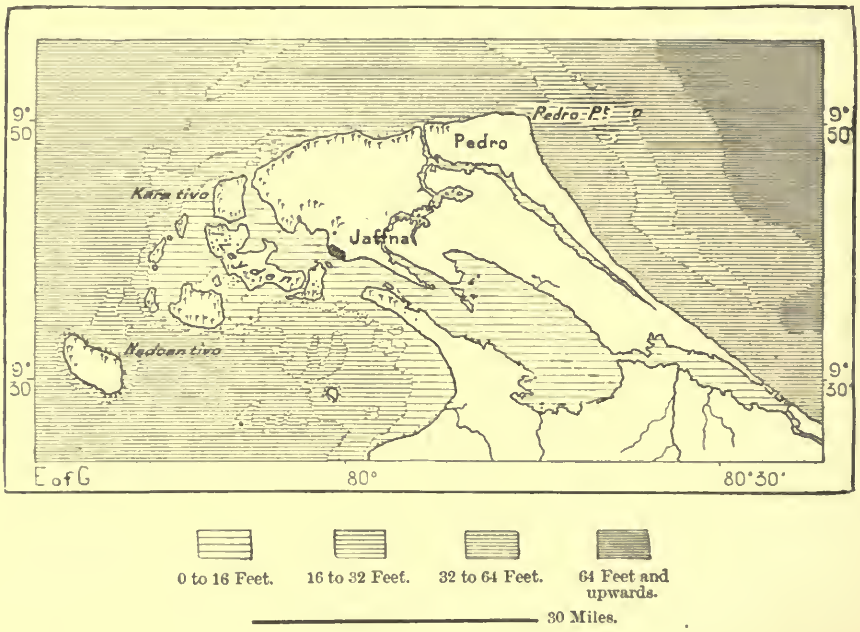
On the shallow channel separating Manaar from Ceylon stands the town of *Mantotte*, a name said by some to mean "Garden," but by others interpreted the "Great Ferry," in allusion to a port supposed to have formerly occupied this site at the east end of the "Bridge of Rama." In the neighbourhood is *Arapo*, the chief station of the pearl fisheries. During the season this place swarms with immigrants, the beach is covered with tents, and the sea alive with fishing craft. The oyster-beds, which are a government monopoly, having been exhausted some years ago, this industry was suspended between 1833 and 1854, after which the yield for the first season amounted to seven million shells. In 1863 the fishing was again interrupted for ten years, and when resumed not more than two millions were taken. But in 1880 it rose to thirty-five millions two hundred and thirty-eight thousand, valued at no more than £20,000, the market price being now ten times less than at the beginning of the century. The beds, which are over 3 feet thick, fringe the coast for vast distances, giving some idea of the enormous quantities of pearls yielded by these fisheries from prehistoric times. Farther

south, the bay formed by the island of Karativo and the Calpentyn peninsula with the mainland abounds in fish, large quantities of which are forwarded to Colombo. Here also are taken turtles, sharks, whose fins are prepared for the Chinese market, and the edible sea-weed known as Calpentyn Moss (*Chondrus crispus*). Yet the fishers employed in these waters are wretchedly poor, owning neither the boats nor the nets they use, and being compelled to pay a duty for the privilege of drying the produce on the beach. The chapel of St. Anne, on the Calpentyn peninsula, is the chief place of pilgrimage for the Roman Catholics of Ceylon, who here assemble to the number of 25,000. The saint is even highly venerated by the Hindus and Mohammedans themselves, who call her Hanna Bibi, "Lady Anne."

The forests of the Calpentyn district are studded with reservoirs, now either filled in or changed to marshes, on the banks of which formerly stood the great

Fig. 157.—Jaffna.

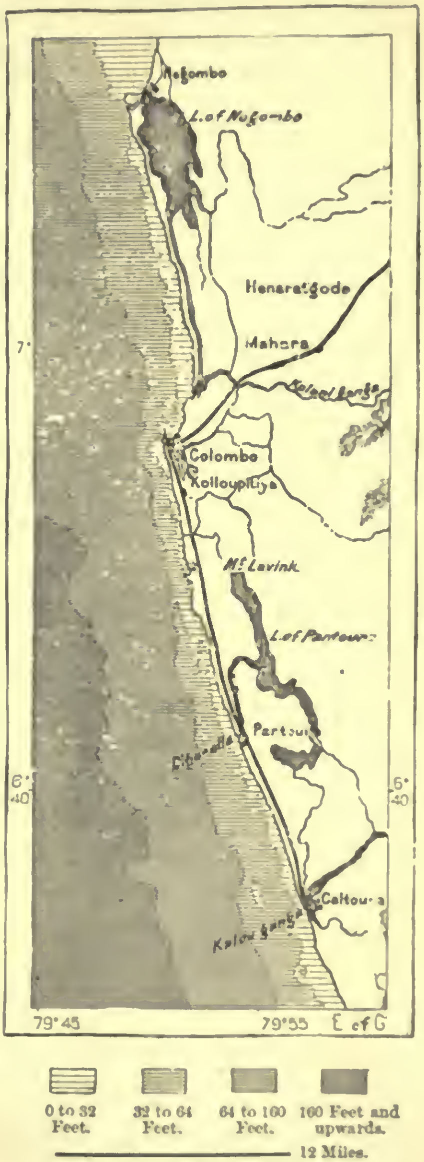
Scale 1 : 1,000,000.



cities of Ceylon, whose populations were numbered by hundreds of thousands. *Anarajapura*, the ancient *Anuradha*, which was a royal residence over 2,300 years ago, and which is mentioned by Ptolemy under the name of *Anurogrammon* (Anuradhagrama), is now a mere village with less than 1,000 inhabitants. According to the chronicles the enclosures, which, however, also included extensive parks and open spaces, were 15 miles on all sides, so that Anarajapura must have covered a larger area than London itself. The ground is red with brick-dust; tombs, statues, and piles of shapeless ruins are scattered over the jungle; grass-grown topes over 200 feet high still raise their green crests above the surrounding groves, while hundreds of stone columns mark the site of the famous "brass temple." But of all the Anarajapura monuments, the most renowned is the "Sacred bo, the

Lord Victory," the oldest historic tree in the world, which was planted in the two hundred and eighty-eighth year of the old era, and which has never ceased to be mentioned by the local annals. A *via sacra*, lined by tombs and other buildings, runs from Anarajapura for 7 miles south-eastwards in the direction of the Mihintala Hill, which marks the landing-place of the Conqueror of Ceylon. The pagoda crowning the summit and, according to the legend, formerly covered by a fiery carbuncle, is approached by a flight of over 1,000 steps. From the city palaces to this temple, the way was on state occasions laid down with costly stuffs, forming a continuous carpet along the whole route. From the court of this building a panoramic view is commanded of half the island and the surrounding seas.

Fig. 158.—From Negombo to Caltura.
Scale 1 : 650,000.



In the eighth century of the new era, Anarajapura fell from its high position, and was succeeded as a royal residence by *Pollanarua*, which, although less extensive than its precursor, nevertheless stretched for a distance of 30 miles in one direction, with a mean width of 3½ miles. The spot once covered by the finest buildings in Ceylon is now marked by the obscure hamlet of *Toparé*. These buildings, including lofty topes, palaces, temples, shrines, and colossal statues of Buddha, have everywhere become overgrown with a forest vegetation, coiling snake-like round the broken colonnades, and overshadowing the highest pinnacles with an evergreen canopy. The edifices of these two great cities represent an amount of labour probably unsurpassed by the pyramids of Egypt themselves. A single tope at Anarajapura would supply sufficient bricks to build 8,000 average London houses, or to construct a wall, 3 feet thick and 10 feet high, all the way from Paris to the English Channel. West of Pollanarua stands the fortress of Sigiri, another proof of the prodigious labour bestowed by the ancient Singhalese on their monuments. It occupies the summit of a pillar-shaped crag, which is ascended by steps hewn out of the live rock.

South of Calpentyn Bay the coast route traverses the towns of *Putlam*, *Chilaw*,

and *Negombo,* this last surrounded by cinnamon groves, where the Dutch and Portuguese half-castes are relatively more numerous than elsewhere in the island. Beyond a large lagoon the road leads to *Colombo,* the ancient Kalan-totta, present capital of Ceylon. This "Ford of the Kalani," as the name means, was so called from the river which here reaches the coast at a little haven sheltered from the south winds by a tongue of land projecting northwards. Like most Eastern cities, Colombo comprises two quarters—the "black town," occupied by the natives, Singhalese, Mohammedans, and Tamils; and the "Fort," inhabited chiefly by the officials and foreign traders. The streets are lined with avenues of the hibiscus and other trees, whose red and yellow flowers are often strewn over the roadway.

Fig. 159.—Cinnamon Packing.

But as a capital Colombo suffers from the inconvenience of a low sandy site, stagnant waters, and an exposed roadstead. It was formerly surrounded by cinnamon plantations; but in 1832 the government had to abandon this monopoly, and the aromatic plant is now being gradually replaced by palm groves. On the other hand, the coffee plantations of the interior have developed a far more important local traffic, of which Colombo is rapidly becoming the chief outport. To provide for the increased shipping, extensive harbour works have been undertaken, including a breakwater, projecting from the southern extremity of the bay for 1,400 yards in the direction of the Isaur rocks, and a smaller pier sheltering the harbour from the north.

Anticipating the approaching decadence of *Point de Galle*, or simply *Galle*, which the ocean steamers are already leaving for Colombo, numerous residents in that place are beginning to migrate to the capital. Yet Galle has at least a natural harbour, although small and of difficult access, and it occupies an admirable position, as a port of call between the Arabian Sea and Bay of Bengal. It thus stands in the same relation to India that the Cape of Good Hope does to the African continent. Hence, fearing the competition of its southern rival, the capital has hitherto refused it the advantage of railway communication, and the

Fig. 160.—Colombo.

Scale 1 : 35,000.

branch running southwards from Colombo still stops at *Caltura*. The whole seaboard between Colombo, Galle, and *Matura* is traversed by a magnificent route, fringed with avenues of coconut palms, beneath which flourishes a smaller growth of trees and shrubs, often matted together with bright flowering creepers. On the one hand the sea rolls its blue waves against the white chalky beach; on the other the hazy crest of Adam's Peak towers majestically above the more advanced wooded spurs, motionless amid the ever-shifting scenes of the shaded highway.

Kandy, which succeeded Pollanarua as capital of the island, is still a sort of

summer capital for the English officials of Colombo. It is delightfully situated at an elevation of about 1,700 feet on a lakelet encircled by leafy groves, and in a peninsula formed by a bend of the Mahavelli-ganga. Round the lake is developed an amphitheatre of gently sloping hills studded with villas, and supported by a background of still more elevated bluish hills. Built mostly by Portuguese convicts, Kandy, with its tile-roofed houses, resembles a European town planted amidst a rich tropical vegetation of palms, bamboo thickets, and a thousand varieties of fruit-trees. A continuous suburb stretching for over 4 miles towards the south-west connects Kandy with the Botanic Gardens of *Peradenia,* which rank

Fig. 161.—Point de Galle.
Scale 1 : 40,000.

amongst the very finest in the world. In these grounds, some 150 acres in extent, are grown not only the plants peculiar to the island, but also all the exotics that have been introduced and cultivated, chiefly on the slopes of the southern hills The railway connecting Kandy with Colombo is carried over the Kadugannawa pass at an altitude of 2,000 feet above the sea.

In this region the coffee industry has acquired great economic importance in recent years. First introduced by the Dutch in 1690, and then neglected by them

as inferior to that of Java, the coffee plant has only been systematically cultivated since 1825. But after the emancipation of the slaves in the West Indies, Ceylon soon became unrivalled in the British colonies for this produce, and the industry has been rapidly developed, especially since the year 1856. The shrub is grown successfully only on the wooded slopes, the *patenas*, or grassy tracts, yielding indifferent returns, although the soil differs apparently in no respect from that of the neighbouring forests. Over one thousand two hundred plantations cover a total area of 250,000 acres, employing during the harvest as many as 300,000 Tamils. But the plant is subject to many diseases, which at times threaten to destroy the whole crop. Since 1868 great ravages have been committed, especially

Fig. 162.—Coffee Plantations in the Ceylon Highlands.
Scale 1 : 1,000,000.

Coffee Plantations.
18 Miles.

by the *Hemileja vastatrix*, against whose attacks no efficacious remedy has yet been discovered. The annual loss caused by fungus is estimated at £2,000,000.

Recently the Liberian coffee plant has been introduced from West Africa, and as this species is more vigorous and flourishes at lower elevations, the plantations have now been extended down to the plains. Yet the whole area has been diminished by one-tenth, and partly replaced by other cultures, such as cinchona, caoutchouc, cacao, sugar-cane, tea, pepper, cardamoms, and nutmeg. The cinchona bark is exported exclusively to England, and the tea partly to Australia. A line of railway now penetrates through the Upper Mahavelli-ganga valley to the heart of the coffee plantations, and other branches will soon ramify from the main line between Colombo and Kandy. On a plateau rising to an elevation of over 6,000 feet to the south of the zone of culture stands the health-resort of *Nuvera-alia*, where the first European villa was erected in 1829.

East of Kandy the road leads through the delightful Mahavelli Valley down to *Bintenne*, one of the ruined cities of Ceylon. This district, formerly one of the most densely peopled in the island, is now almost uninhabited, and the main highway is continued across a vast wilderness towards the port of *Baticalao* on the east coast. Nevertheless by the restoration of the old tanks and irrigation canals much of these wastes has been reclaimed and converted into productive rice-grounds.

Fig. 163.—Kandy—View taken from the opposite Side of the Lake.

The coconut groves of Batticalao yield the largest and finest fruits in the island, and its lagoon abounds in crocodiles and those singing-fish which are so common in the Bangkok waters.

Trincomali, although the only sheltered harbour accessible to large vessels, is now abandoned by commerce. Here the Portuguese erected a fort, which was afterwards enlarged by the Dutch, while in their turn the English have constructed defensive works on the islands and headlands sheltering the harbour.

But notwithstanding its many advantages the project of removing the seat of government from Colombo to this place is not likely to be carried out, for

Fig. 164.—Trincomali.
Scale 1 : 105,000.

Trincomali lies in an unproductive district, and depends for its supplies on Batticalao and Jaffna.

CHAPTER XVII.

LACCADIVES, MALDIVES, CHAGOS ARCHIPELAGO.

THE statement that the precipitous seaboards of most continental lands are washed by deep seas is certainly not applicable to the west coast of India, where the base of the Peninsula stretches a long way under the ocean. The banks and shallows lying west of the Konkan and Malabar coasts comprise a considerable portion of the Arabian Sea, and the waters extending from Kattyawar southwards to the parallel of Bombay have an average depth of scarcely more than 120 feet. Farther south the submarine bank narrows to a mean width of 60 miles, and beyond the southern extremity of Ceylon it is contracted to a narrow ledge of shoals and reefs.

Between the 17° and 16° N. latitude a narrow trough lying off the port of Rajapur, and ranging in depth from 700 to 1,300 feet, separates from the mainland an isolated bank, covered by little more than 60 feet of water. From this submarine plateau of Angria there stretches a series of banks, reefs, islands, and islets southwards to the centre of the Indian Ocean, and although separated here and there by broad and deep channels, all these insular chains may be regarded as belonging to the same geological formation. The Laccadives, Minicois, Maldives, and Chagos islands all form part of this southern range, which has a total length of 1,550 miles between the Angria and Centurion banks. Jointly with the western group of the Seychelles it completely separates the Arabian Sea from the open waters of the Indian Ocean, and forms, according to many naturalists, the backbone of a now vanished continent. From the characteristic apes of Madagascar the name of Lemuria has been given to this region, which till the beginning of the tertiary epoch is supposed to have occupied most of the space lying between Malaysia and the east coast of Africa.

South of Angria the soundings have revealed another bank, Adas, covered by 260 feet of water. Below the 14° N. latitude the shallows begin with the Coradivh (island of Cora), none of whose reefs actually rise above the surface. The Sesostris bank and the Bassas and Pedro (Padna or Munyal par bank) also form part of these shallows, which are separated by intervening channels 2,000 feet deep.

South of these banks are scattered the Laccadives, which are encircled by still deeper troughs, and separated from the mainland by an abyss where the plummet has been sunk 7,800 feet without reaching the bottom.

THE LACCADIVES.

The Laccadives, or Laksha-dvipa, that is, "Hundred thousand Isles," can only claim this title by including the countless reefs encircling the islands and exposed at low water. Apart from a few rocks, there are altogether not more than twelve islands always above water, and of these eight only are inhabited. Directly attached to the Indian Empire are Chetlat, Kiltan, Kadamat and Amini (Amindivi), while Agath (Aucutta), Kavarathi, Antrot, and Kalpeni are administered on behalf of the "Bibi" of Cannamore. Lying on the trade route of the Arab vessels sailing to the west coast of the Peninsula, the Laccadives were certainly known from the earliest times, although their slight elevation gave rise to much doubt as to their true character. The old traditions of rapid changes and disappearances are not confirmed by the present inhabitants, and we now know that the islands increase or diminish slowly under the diverse action of madrepores, marine currents, erosions, and cyclones. Each island, consisting of sand and decomposed coral mixed with some vegetable humus, rises little more than 10 or 12 feet above high-water level, and the cliffs are continued, especially on the west side, by banks, somewhat depressed in the centre. Thus are developed a number of lagoons communicating by narrow channels with the sea. Several of the Laccadives are encircled by annular reefs like the atolls of the Pacific Ocean, but lacking the surprising regularity of the Maldives.

Although there are no springs in the islands, good water abounds everywhere. On piercing the upper layer of coral, and removing the sand on which it rests, the natives find a copious supply, which, as on the north coast of Ceylon, rises and falls with the tides. The soil, without being very productive, yields rice, sweet potatoes, oranges, and especially coconuts. Of this palm there are over 250,000 plants, which yield nearly all that the inhabitants require, and also supply the coir, or fibre, forming their staple export.* The only indigenous mammals are the rats, which are very destructive to the coconut plantations. Cattle have been imported, but they are a small, feeble breed. The natives are of Malayalim speech, allied by tradition to the Nairs, and by religion to the Mohammedan Moplahs. Although no Hindus reside in the Archipelago the wealthy families claim descent from the high castes of the mainland. In the northern islands, which are administered by the English, property is generally transmitted through the male line; but in the south, the women have preserved the supremacy derived from the old matriarchal customs. Excluding the banks and reefs, the Laccadives have a total area of 20 square miles, with a population of 10,695 in 1871.

Between the Laccadives and Maldives lies the solitary island of Minicoi or Minacai, consisting of a coralline crescent, whose two horns are continued west-

* Average yearly exports of the Laccadives, £17,000.

wards by an annular reef. Thus is formed an inner lagoon, accessible to boats and even ships, through a channel over 12 feet deep at high water. The island has a total length of 6 miles, but is only a few hundred yards wide, and would be swept by the sea in rough weather but for an embankment 20 feet high running for nearly 2 miles along the east side. This structure has often suffered from the cyclones, one of which in 1867 carried off a sixth of the whole population. The chief products are coconuts, coir, salt fish, and white cowries (*cypræa moneta*), which are used as a currency in Africa. Besides their fishing-smacks, the natives own about a dozen *odies*, or vessels, with which they trade as far as Ceylon and Calcutta. They form five castes, of which the first two own all the land with its coconut plantations. The three others do all the work, and the women especially are very industrious. Polyandry is no longer practised, and although the people are exclusively Mohammedans, there is no case of polygamy. Politically, the island depends on the Bibi of Cannanore, but by its language and traditions it belongs to the Maldive Group. An islet at the southern extremity of the lagoon is set apart as a hospital and cemetery.*

The Maldives and Chagos Islands.

The archipelago of the Maldives, that is, the "Thousand," the "Malabar," the "Malé," or the "Rock" Islands, as the name is variously interpreted, stretches for over 500 miles north and south, some of its southernmost reefs penetrating into the southern hemisphere. The vast zone occupied by its atolls has in some places a breadth of nearly 50 miles; but the whole area of the land exposed at low water is estimated at scarcely more than 2,000 square miles, and at high water five-sixths of this space are submerged.† The sultan takes the official title of "King of the thirteen provinces," and of the 12,000 islands. According to Owen this is scarcely a third or a fourth of the actual number, although, apart from mere reefs, a few hundred only appear on the most carefully prepared charts. Ptolemy reckoned as many as 1,378, but not more than 175 are inhabited.

Even in the Pacific there are no coral islands that present more symmetrical atolls with lagoons in the centre. At high water each separate island forms a crescent-shaped bank, or segment of an annular reef, which is entirely exposed only at low water. Nor are they distributed irregularly over the surface, but grouped in circles or ellipses in such a way as collectively to form an atoll, whose coral ring, broken at a thousand points, encloses a central lake. Moreover, the nineteen atolls thus developed form altogether, so to say, one vast elongated atoll, which encircles an inland sea many hundred fathoms deep. To account for these regular formations, Darwin supposes that mountains of diverse elevation formerly stood on the site of the now scarcely emerged Maldive Archipelago. Round this upland region the zoophytes then built up their coral rings to within a few feet of the surface. But the hills, lying in an area of subsidence, gradually disappeared,

* Area of Minicoi, 2¼ square miles; population (1871), 2,800.

† Area of the Maldives at high water, 360 square miles; population, 150,000.

the outer barrier was lowered, and the polyps compelled to build higher and higher. Marine channels were opened between the coral formations, which thus became distributed in separate islands, round which were developed fresh rings of less extent. Lastly, these islands themselves became again subdivided in the same way, and thus were formed within the outer circle secondary rings, which, in their turn, were divided into numerous tertiary fragments.

Fig. 165.—Mahli-Mahlu Atolls.
Scale 1 : 900,000.

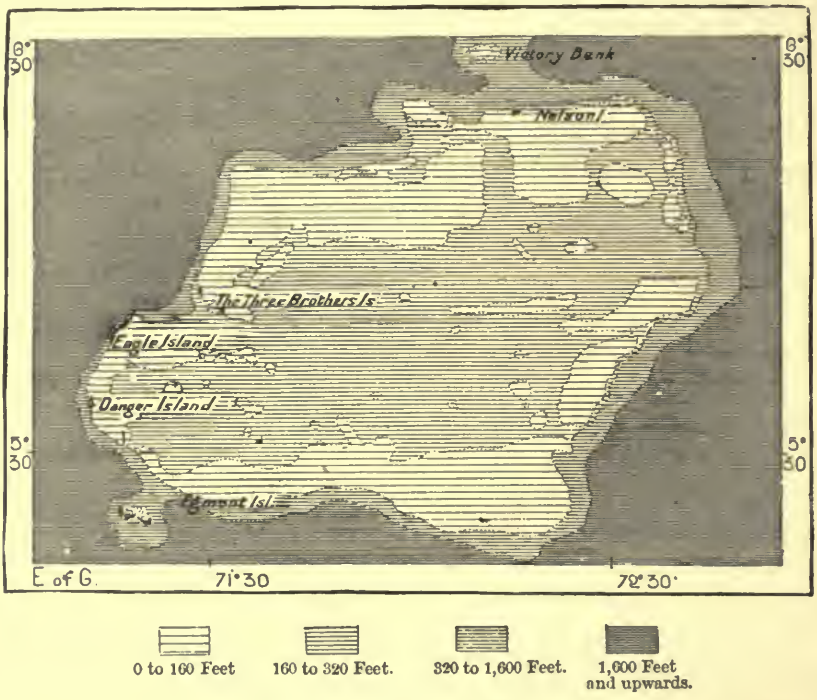
Like the Laccadives and north coast of Ceylon, the Maldives possess an abundance of fresh water lying beneath the coral surface, and supporting a more exuberant vegetation than that of the neighbouring insular groups. Besides the coconut groves there are extensive bread-fruit, banyan, and tamarind plantations; and, according to Owen, the flora includes also the *lodoicea* of the Seychelles, which yields the sea coconut, regarded in India as a specific against all maladies.

No regular census has been taken of the population. About 1,500 are grouped on the Malé, or King's atoll, residence of the sultan, and situated near the centre of the eastern chain of islands. This is the most populous community, and the only one which is permitted to trade directly with strangers. Of the other inhabited atolls few have more than a few hundred residents, whose houses are usually erected on piles, as a protection against the rats. Every village has its weavers, potters, and workers in metal, although in the time of Pyrard each island was set apart to a special trade.

The group of Chagos atolls forms a distinct archipelago, separated from the Maldives by a channel 300 miles broad and 2,500 fathoms deep. The chief bank, which is almost completely submerged, has a circumference of 270 miles, without reckoning the inlets and headlands. Darwin regards it as the remnant of a region

which subsided too rapidly to allow the polyps time for the erection of their coral reefs. But however this may be, the south and east sides are under water ranging from 25 to over 300 feet in depth, while in the north there is nothing but the islet of Nelson overgrown with brushwood. Towards the west, however, the surface is broken by six fragments of reefs, known as the Three Brothers and Eagle Islands. The Solomon and Perros Banhos atolls, lying north of the Chagos Bank, comprise ten and twenty two islets respectively on their annular reefs, and the Egmont group on the south-west consists of six rocks. The Diego Garcia atoll, situated at the south-east corner, forms an irregular coral barrier, of which about seven-tenths rise above the surface. It has a total length of 31 miles, but except in the extreme

Fig. 166.—Chagos Bank.
Scale 1 : 2,000,000.



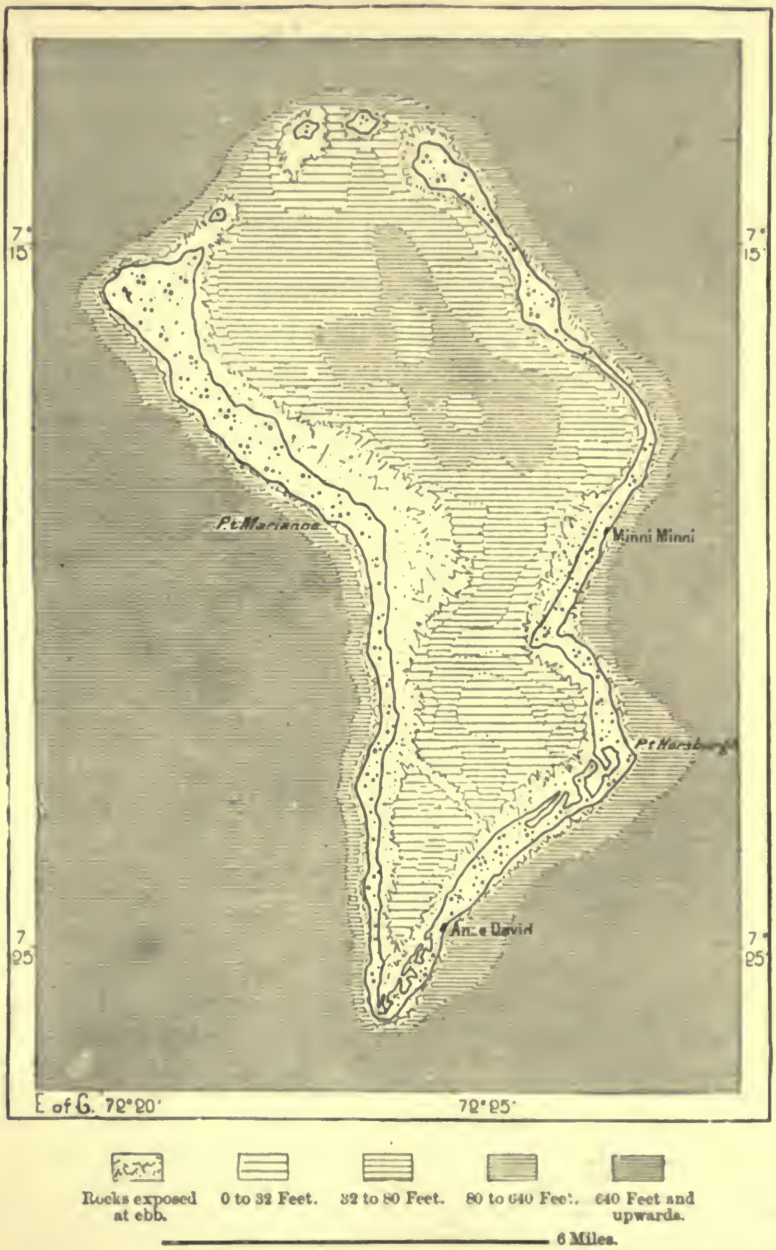
north-west, is nowhere much more than 1,000 yards broad. The northern gap separating its two main branches is blocked by three islets.

After their discovery by the Portuguese, the Chagos atolls remained uninhabited till the end of the last century, when some planters from Mauritius founded some settlements for the preparation of coconut oil. Since the year 1791 this industry has been in the hands of the French Creoles from the same island. In Diego Garcia, which has also been utilised as a station for lepers from the Mascarenhas group, are concentrated two-thirds of the whole population.* It is visited three

* Area of the Chagos Isles, 76 square miles; population (1871), 689: coconut-oil exported (1880), 160,000 gallons.

times a year by vessels from Mauritius, and here every two years a magistrate holds his court. The lagoon enclosed by its two coral barriers forms one of the

Fig. 167.—Diego Garcia.
Scale 1 : 200,000.



finest harbours in the world, accessible to the largest vessels, and affording every facility for establishing repairing docks, outfitting and coaling stations.

CHAPTER XVIII.

MATERIAL AND MORAL CONDITION OF INDIA.

ACCORDING to the census of 1881, British India, including Dardistan, Kashmir, Nepal, Bhutan, Ceylon, the Laccadives and Maldives, the native states, but excluding British Burma, has a total population of 257,000,000, showing an increase of about 12,000,000 since the census of 1871. At no former period was such a vast multitude concentrated in the Cisgangetic peninsula, which at present embraces over one-sixth of the human race. The population seems to have been doubled during the last fifty years, and it is still increasing at a rapid rate, even in the most crowded districts. As in Japan and all other Asiatic countries, where trustworthy returns have been obtained, the males are everywhere in excess of the females, the opposite being the case in Europe. In 1871 the difference was about 5,500,000, which, however, should perhaps be partly attributed to the errors of the census takers, who were seldom able to gain access to the zealously guarded family circles. Female infanticide, formerly almost universal, especially in Rajputana, is now everywhere vigorously repressed, so that this great discrepancy between the sexes will probably henceforth tend to disappear.

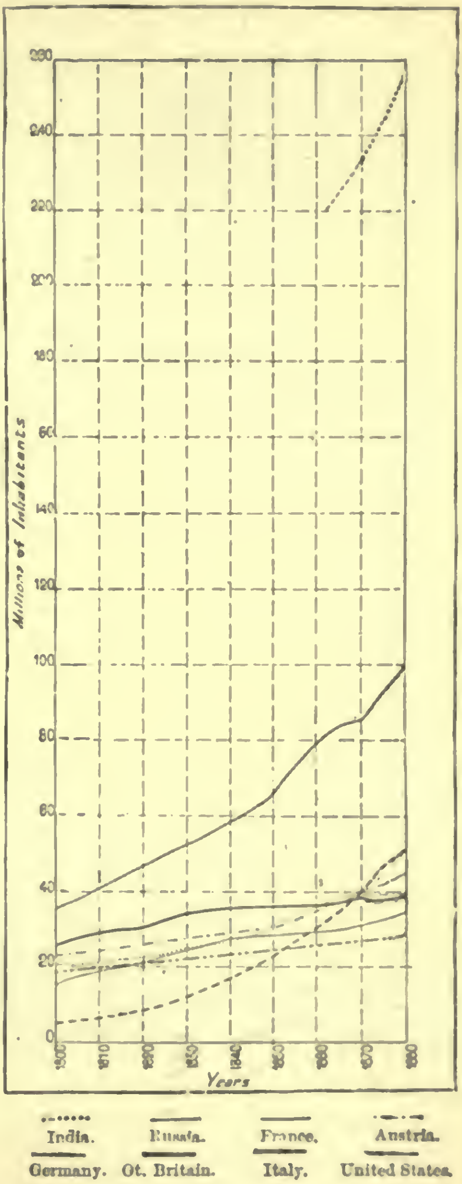
Vital Statistics.

Of natives of the British Isles, excluding the military and seafaring classes, there were in 1871 not more than 59,000, mostly tea and coffee planters, miners, engineers, mechanics and traders—the Scotch element being relatively by far the most numerous. India is often spoken of as a British "colony," but no attempt has ever been made to colonise even the healthy and temperate upland districts of the Himalayas, Chota-Nagpore, the Nilghiris or Anamalah Hills. Such undertakings could never succeed in the face of native competition, which prevents even Chinese peasants from settling in the agricultural lands. Hence, India never can become a colony, in the strict sense of the word, and must continue to be held by military tenure.

At the same time the popular impression that the English race can never become acclimatised, even in such health-resorts as Simla, Darjiling, Mahabalesh-

var or Utakamund, has been falsified by the experience of the last few decades.* British immigrants, doubtless, run more danger than those of Southern Europe, and suffer much, especially from dysentery and the marsh fevers of the alluvial tracts. Yet the excessive mortality, said to amount to over 50 per cent. in ten years, seems to be largely due to the recklessness with which the new arrivals expose themselves to the action of the climate, without modifying their northern habits of life. Affections of the liver are in direct proportion with the use of alcoholic drinks, and many Englishmen, who regulate their diet and live temperately, enjoy excellent health, suffering less even than the natives from fever and epidemics. The diminished mortality of the British troops, which was gradually reduced from 69 per 1000 in 1854, to 12·71 in 1877,† also shows that acclimatisation in India is largely a question of diet and improved sanitary arrangements. At present the death-rate in the Anglo-Indian army is relatively less than in many European states, and is even lower than amongst the native troops, whose losses amounted in 1879 to 13·38 per 1000.

Fig. 168.—Relative Increase of the Population in India, Europe, and the United States.



Amongst civilians many families have become perfectly acclimatised; several generations have succeeded each other in various parts of the Peninsula, and there can be no longer any doubt that the English race might thrive in this region. The climate is no doubt supposed to be peculiarly fatal to children; but even this point is far from certain, for all the high functionaries, "prince merchants," and wealthy classes, send their young offspring to England for their education.

The half-caste Eurasians, that is, Europeo-Asians, sprung of European fathers and native mothers, contribute little to consolidate the British rule, for they are regarded as English neither by the Hindus nor by the pure-blood whites. Morally, also, they are wily and untruthful, and enjoy less consideration at present

* Clements Markham, "Travels in India and Peru."

† Francis Galton.

than formerly. Shamefully disowned by their fathers, despised by the ruling race, and hated by the natives, they lead a precarious life of misery and neglect. After the Sepoy mutiny, during which all alike were threatened, a certain solidarity was momentarily established between the English and half-breeds; but the friendship did not long survive the common danger, and at present the wealthy Parsis and Hindus receive a relatively larger share of government patronage than the

Fig. 169.—Utakamund—View taken from a Spur of the Dodabetta.

unfortunate Eurasians. Those of English, French, and Portuguese origin number altogether at most half a million, the last being relatively the most numerous, and so long established that they are often scarcely to be distinguished from the surrounding Hindus except by their style of dress. The Jews, settled in several towns along the west coast many centuries before the Portuguese, have nevertheless far better preserved their type, a circumstance due to their greater purity of blood, and to the maintenance of their hereditary professions.

The general growth of the population appears to be everywhere greater amongst the races of Aryan speech, whatever be their real origin or present religion. These populations already comprise four-fifths of all the inhabitants of the Peninsula, and this proportion is being continually increased, thanks to the

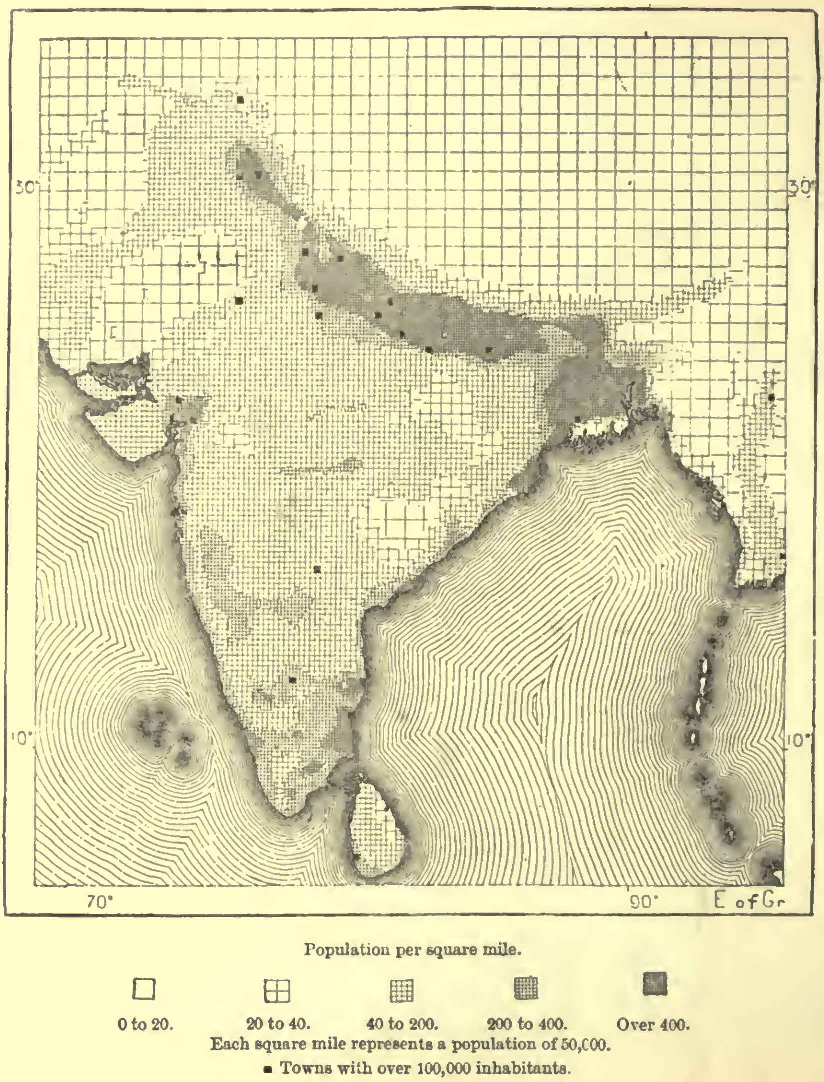
Fig. 170.—Jewish Women of Cochin.

advantages secured to them by a more fertile soil, a better climate, and easier means of communication. The aborigines of Audh, Behar and Bengal have been for the most part Hinduised; while Hindu influences are gradually spreading amongst the Bhils, Mhairs, Gonds, Santals, Bodos, and other primitive peoples of Rajputana, the Central Provinces, Chota-Nagpore, and Kachar. Thus the number

of wild tribes, still collectively estimated at some 12,000,000, is diminishing from year to year, chiefly through the steady encroachments of civilisation on the savage world. The increase is much slower in the Dravidian linguistic domain, one half of which consists of a slightly productive and badly watered plateau. Here also

Fig. 171.—Density of the Population of India.

Scale 1 : 30,000



the natural growth in the more populous and fertile coast-lands is carried off by emigration.

Although nearly every racial trait is represented amongst these vast multitudes, the prevailing type is characterised by pliant limbs, thin legs, a purely oval face, regular features, black wavy hair, a complexion ranging from the Italian brown to that of the swarthy Arab, penetrating glance, mild but suspicious expression.

While less muscular than the European, the Hindu is more graceful in his movements, and on the whole even better looking. Morally, the natives of India are patient, temperate, laborious, fond of study, but also wily and somewhat untrustworthy. Their feeble physique has often been attributed to their vegetable diet; but it is a mistake to suppose that the Hindus are strict vegetarians. Beef, no doubt, is forbidden; but all eat butter, milk, and, where procurable, fish and mutton. The cereals forming the staple food vary from district to district. Rice, either alone or mixed with maize, prevails in the Ganges delta, Behar, and along the seaboard; barley and various species of millet on the plateaux; wheat in the northern provinces; the fruit and sap of the palm in many parts of Travancore, Madura, and Cochin.*

Epidemics commit fearful ravages among these enfeebled populations. Cholera is domiciled in all the large towns; elephantiasis, under various forms, is very common, affecting one-fifth of the inhabitants in some provinces; and in 1872 there were as many as 102,000 lepers in the three Presidencies alone. The mean death-rate for the whole of India is stated by Hunter to be 32·57 per 1,000, or one-third higher than in West Europe. But the popular imagination is especially struck by the horrors of the periodical famines, which, in a single province, has at times swept away a fourth, or even a third of the population in a few months. Since 1771, when 10,000,000 perished in Bengal and Behar, twenty-one great famines have succeeded each other, during eight of which the victims were reckoned by millions. In 1866 Orissa lost one million, that is, a fourth of its inhabitants; and in 1868 1,200,000 died of starvation in the Panjab, and three times that number in the feudatory states of Rajputana and the plateau. Including the wasted tracts in the Nizam's dominions, the famine of 1877 carried off, probably, not less than 4,000,000 altogether. Yet while such multitudes were perishing for want of food, the port of Calcutta continued to export large quantities of corn to foreign countries, the famished districts being too poor to pay its market price. However, towards the close of the two famines of 1874 and 1877, the Government interfered in the purchase and distribution of cereals. Energetic measures were also taken to organise relief works, such as roads, canals and railways, on which £16,000,000 were spent between the years 1874 and 1877.

Agriculture.—Industries.

That the vast majority of the population of India belongs to the peasant class, is evident from the Census of 1872, which enumerated 1,460 towns with 5,000 inhabitants and upwards, forming a total urban population of 18,000,000; that is, less than one-tenth of the British possessions alone. On the other hand, there are over 240,000 villages with less than 200 souls, 200,000 whose population ranges from 200 to 1,000, and 32,130 in which it varies from 1,000 to 3,000.

From the somewhat incomplete official returns, it appears that not more than one-third of the whole land is under cultivation. Certainly the rocky slopes of the

* Barley and millet is the staple food of 100,000,000; wheat of 80,000,000; rice of 75,000,000.

Himalayas, many parts of the Thar desert, and of the Dekkan plateaux, can never

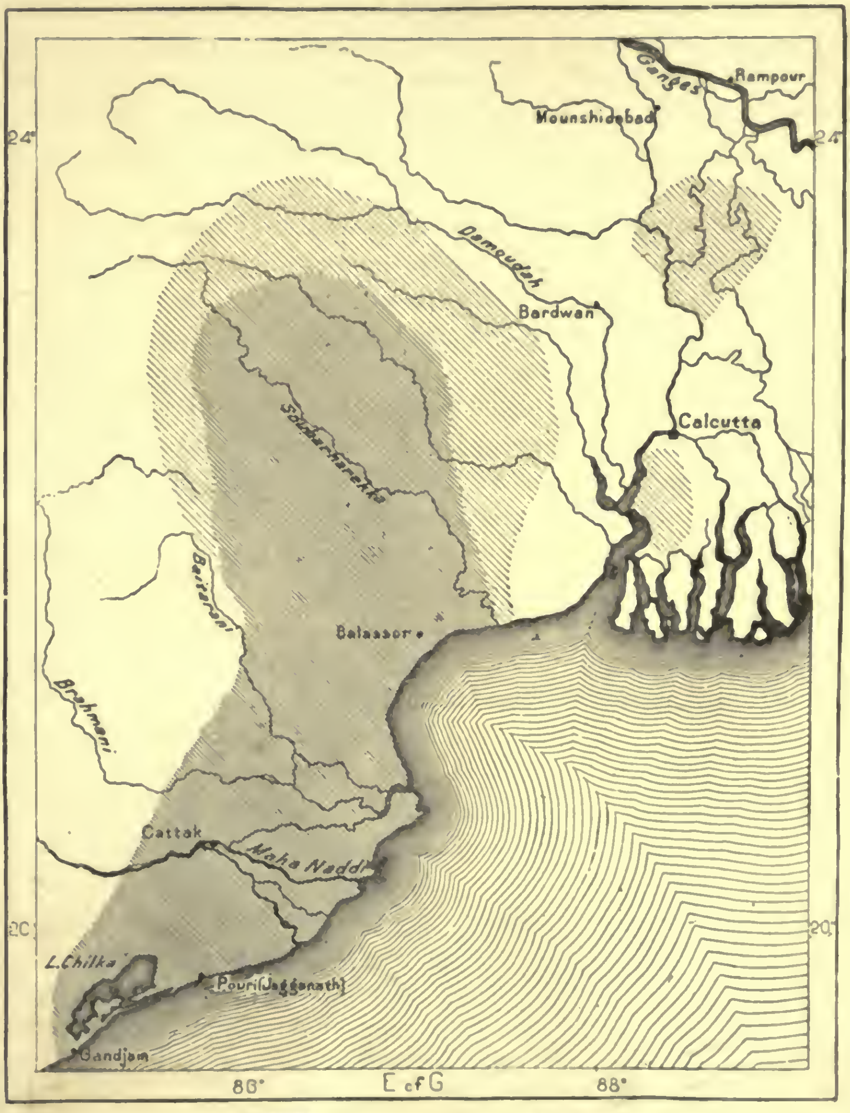
Fig. 172.—Famine Victims.

be cultivated; but extensive tracts might nevertheless be elsewhere reclaimed either by irrigation, drainage, or merely clearing the jungle. Yet in several

districts the rural population is already overcrowded, and the land subdivided to such an extent, that the plots are too small to support their owners, or tenants, and leave enough to pay the taxes and other burdens. According as the fertile tracts become more scarce with the ever-increasing population, the price rises

Fig. 173.—Famine Zone, Orissa.

Scale 1 : 4,300,000.



Zone of greatest intensity. Zone of least intensity.

60 Miles.

through competition, and poverty is thus perpetuated and intensified. Yet the land is everywhere carefully cultivated; the tiller contrives to raise two, or even three crops in the year; he perfectly understands the necessity of a proper system of rotation, manures the soil and skilfully regulates its irrigation, where needed.

Next to cereals, which in favourable seasons are exported, opium is the most important crop commercially. It is cultivated chiefly on the plains of the Ganges, in the Benares and Patna districts, and on the Malwa plateau. The total yearly value of the crop, which is a state monopoly, and which is exported exclusively to Farther India and China, is about £12,000,000, of which £9,000,000 are net profit. The cotton crop is both less important and subject to great oscillations from year to year. During the American war the export rose in four years from £3,000,000 to £37,000,000, after which it rapidly declined, and varies at present from £8,000,000 to £12,000,000. The cotton-growing districts comprise altogether over 10.000,000 acres; but the indigenous plant is inferior in length of fibre, and in other respects, to that of the United States, and in several districts of Bombay it has already been replaced by varieties from America.

While the so-called "regars," or black lands of the Dekkan, and the laterite of Carnatica, are found most suitable for cotton culture, jute flourishes best on the alluvial riverain tracts, and especially the more recent "char," or "tey" formations. Hence this fibre is cultivated mainly in North and East Bengal, especially along the banks of the Brahmaputra. It is chiefly in the hands of small landed proprietors, who raised over 310,000 tons in 1879, and exported to the value of £3,800,000. In the same year the indigo crop, cultivated at present principally in Behar and Madras, was estimated at £1,467,000. But indigo has been largely replaced, especially by tobacco, which was introduced into the Ganges basin in the seventeenth century, and which now covers altogether over 500,000 acres in various parts of the Peninsula. The best qualities are produced in Tirhoot, Cocanada, and the islands of the Godaveri, Dindingal, and Trichinapoli. Within the last thirty years India has become, next to China, the greatest tea-producer, and at the present rate of progress it promises soon to take the leading place as an exporter of this article. The proportion of Indian teas imported into England rose from one-tenth of the whole in 1870 to one-third in 1880. This plant flourishes between the altitudes of 2,000 and 6,500 feet, along the Himalayan slopes, in the doars of Bhutan, in Sikkim, Kangra, Kumaon, and Garhwal, and is continually advancing up the Assam hills, in Chota-Nagpore, the Nilghiris, Kurg, Wainad, Ceylon, and British Burma. The finest qualities come from Kangra, and are said to rival the best Chinese varieties. But this industry has acquired its greatest development in Assam, where the first tea plantations were established. Of the whole crop, which in 1882 was valued at £4,000,000, about one-half is raised in that province.

In Southern India and Ceylon, coffee-culture corresponds to that of tea in the north. The slopes of the Ghats, certain parts of the Mysore plateau, Wainad, and especially the Kurg and Ceylon uplands, are already covered with plantations of this shrub, which was first introduced into the Peninsula by a pilgrim from Mecca, in 1560. At present the annual crop is estimated at about £5,600,000, of which over three-fourths are accredited to Ceylon.

The aspect of the country has in many places been modified by clearances. In most of the thinly-peopled districts the peasantry fire the jungle, sow their corn in the ashes, and, after exhausting the soil, repeat the same process elsewhere. In

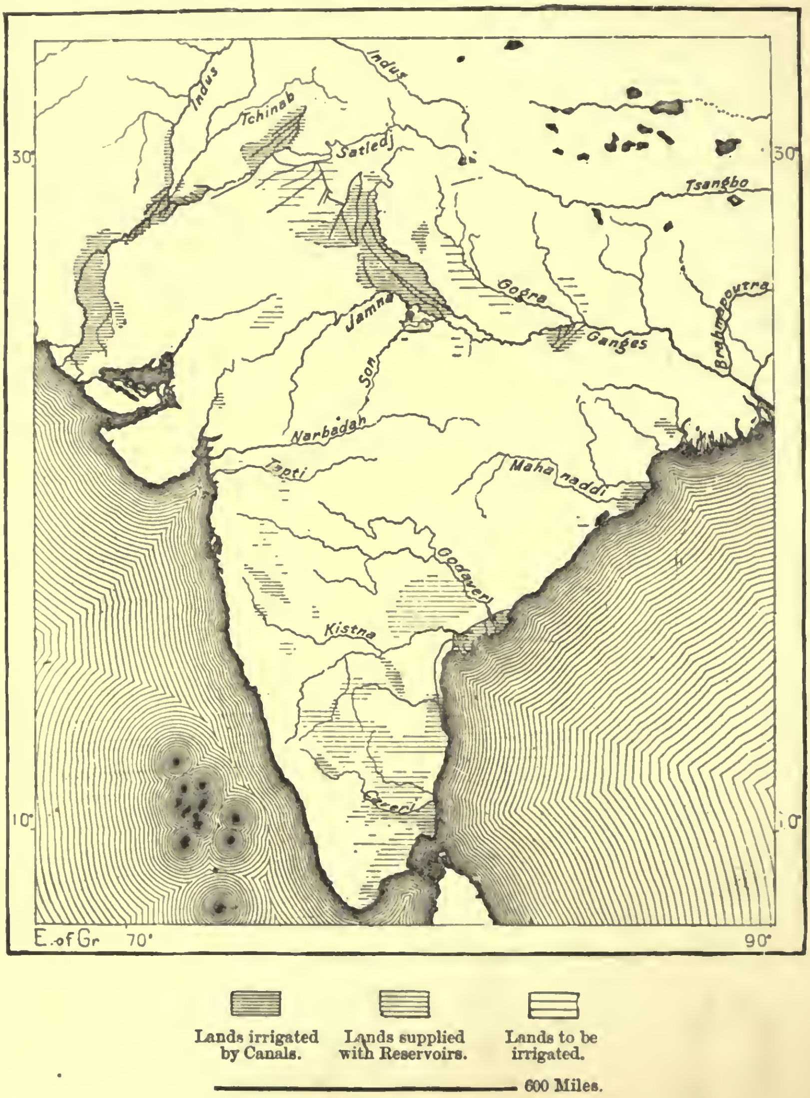
this way vast tracts have been entirely cleared, while in many populous regions the destruction of forests has been still more complete. In some of the Upper Ganges and Jamna plains not a single tree is now visible, and on the Dekkan plateau the traveller may journey for days together through treeless districts. The forests of the Southern Ghats, Kurg, Cochin, Wainad, and Travancore have been wasted, to

Fig. 174.—Chief Agricultural Products of India.
Scale 1 : 20,000,000.

the great injury of the land, which has been deeply furrowed by the action of the tropical rains. Since 1860, however, the woodland districts have been placed under State control; the barbarous system of culture by firing the jungle is now forbidden, and here and there the work of plantation has been seriously taken in hand. On the Himalayan slopes every health-resort has been surrounded with

parks and orchards, chiefly of European species; while in Sikkim, the Nilghiris, and the highlands of Ceylon, great encouragement has been given to the growth of such useful exotics as the eucalyptus, the Bolivian cinchona, and varieties of the caoutchouc from Malaysia, Madagascar, Mexico, and Brazil. In 1879 over four million cinchona plants had already been propagated in the forests of the Peninsula.

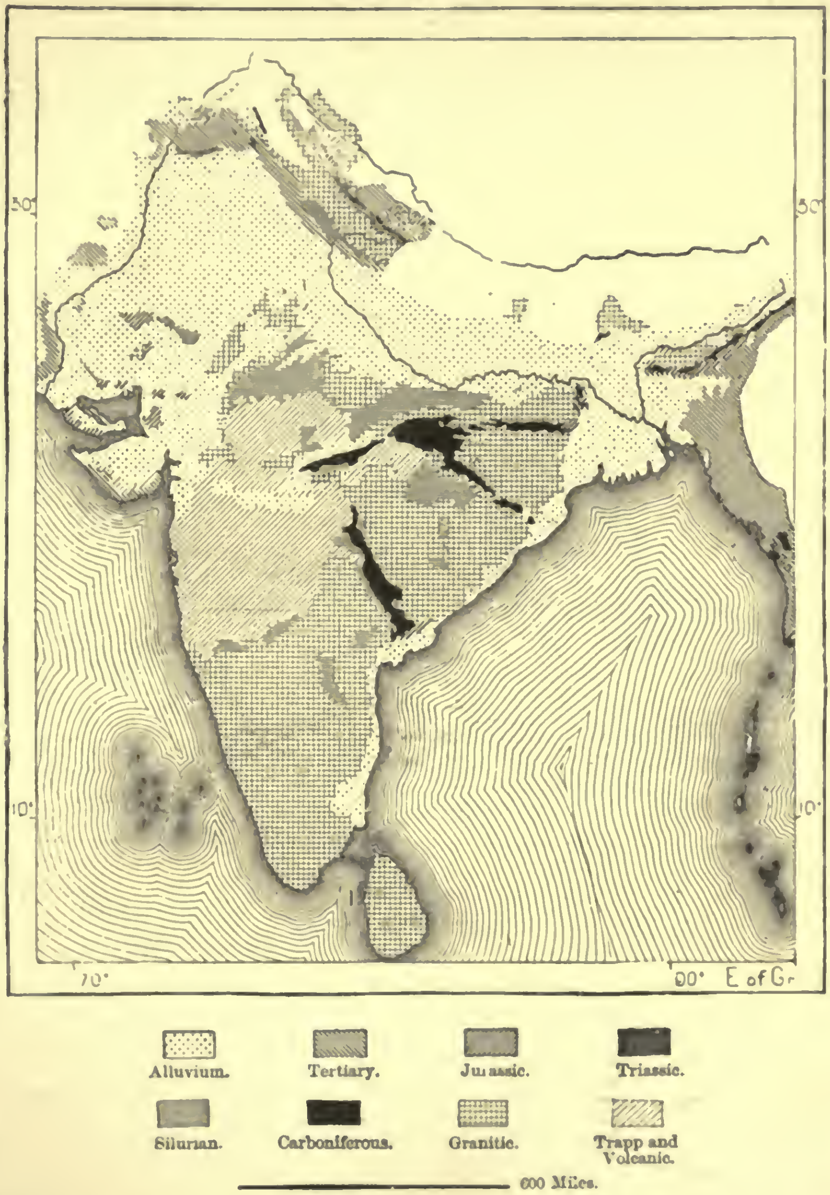
Fig. 175.—Irrigation Works of India.
Scale 1 : 25,000,000.



In certain provinces no tillage would be possible but for artificial irrigation. Such are the plains of the lower Indus, besides a large part of the Panjab and the doabs of Hindustan proper. In Southern India the water is retained in terraced reservoirs, whence it is drawn off during the dry season, through numberless irrigating rills. By merely restoring the old embankments, and completing the network

of canals, the English have succeeded in reclaiming many million acres of waste lands. But in the north the streams flowing from the Himalayas have too rapid a course to be confined in reservoirs; hence here the discharge is controlled chiefly by lateral canals with sluices. Of these great works the Ganges canal is the largest in

Fig. 176.—Geological Map of India.
Scale 1 : 28,000,000.



the world; but many others, branching from the Indus, Satlej, Ravi, Son, are also remarkable monuments of human industry. The Sarju, Gandak, Tapti, Narbadah, and other large rivers, are also utilised for fertilizing the land; and in the whole of India about 30 million acres altogether have been brought under cultivation by the

works of canalisation, on which about £12,500,000 were spent between the years 1868 and 1878.

The artisans of India have at all times been distinguished by their skill and the delicacy of their workmanship. Unfortunately many of the native industries have already nearly disappeared, while the existence of others is seriously threatened. The looms of Dakka, and so many other formerly prosperous cities, are now silent, which produced those gossamer muslins so admired by the early European travellers. Kashmir still exports its famous shawls, but the number of hands is yearly diminishing; while those that remain are now satisfied with slavishly imitating European or older patterns. From England now come the models of woven fabrics or jewellery which continues to be produced either in the State prisons or in the

Fig. 177.—The Panna Diamond Fields.

Scale 1 : 460,000.

Diamond Mines.

6 Miles.

free workshops of impoverished craftsmen. The English ladies have also introduced the manufacture of lace into the schools and Christian congregations.

During the Anglo-French wars of the last century, the manufacturing industry, properly so called, was very active in the foreign factories. Around every fort the Indian companies had established hundreds and even thousands of weavers, who supplied them with fabrics for exportation to the west. But this process has been reversed by the prodigious development of the textile industry in Lancashire; and cotton goods, especially the coarser kinds, are now imported from England. But some Scotch, Jewish, Parsi, and other capitalists have endeavoured to profit by the double advantage of the raw material and the consumers on the spot, and cotton-spinning mills are now at work in the neighbourhood of Bombay. Large

THE COTTON MARKET, BOMBAY.

jute factories have also been established at Calcutta. But the metallurgic works, founded by the State and by private enterprise, in Chota-Nagpore and some other districts, have not proved very successful. Of these the largest are the foundries of Jamalpur, which employ nearly three thousand hands.

To become a great industrial centre, what India chiefly needs is an abundance of cheap fuel. Including British Burma, the coal-measures cover altogether an area of about 36,000 square miles; but most of the deposits are too poor to pay for the expense of mining, while others are of very inferior quality. Hence the total available quantity is small, and the annual yield is estimated at not more than one million tons.

The other mineral products, such as the diamonds of Panna, Sambalpur, and Karnul; the gold of Wainad; the copper of Singbhum and the Himalayas; the iron of Salem and Chota-Nagpore are also relatively of small economic importance. Of all minerals, the most extensively worked is salt, which is a government monopoly. But the pearl fisheries, near the Indian side of the Gulf of Manaar, have been abandoned, while those of Ceylon are only productive at intervals of several years.

Railways.—Trade.—Shipping.

Since the great and increasing development of continental and oceanic highways, inland and foreign trade has continued rapidly to expand from decade to decade. By reducing to one half the distance between India and England, the Suez Canal has revolutionised the system of exchanges; while the local traffic has received a great stimulus from the network of railways now overspreading the Peninsula. Of this network the first section was the short line opened in 1853 between Bombay and Salsette. In the same year were projected the great trunk lines which connect the three capitals, Calcutta, Madras, and Bombay, but which were not finished till 1871. Now the whole system is nearly completed by secondary lines, uniting the Bay of Bengal with the Afghan frontier, traversing the Indus Valley from Karachi to Peshawar, connecting Bombay on the one hand with Delhi, on the other with Tuticorin over against Ceylon. The chief gaps still to be supplied are a direct line from Bombay through Nagpore to Calcutta, two coast-lines on both sides of the Peninsula, the junction of the Indus with the Rajputana sections, and a line between Calcutta and the Irrawaddi basin. The system also still remains isolated from that of the west, and the future connection of India by an overland route is one of the most serious political questions of the present time.

Road-making has not progressed with the same relative rapidity as railways. Of the 560,000 miles of postal routes, not more than 20,000 can be regarded as properly constructed, with the necessary bridges and embankments. One of the most remarkable of these finished highways runs for 1,500 miles from Calcutta directly to Peshawar, and throws off several branches towards the Iranian plateau, Kashmir. the Himalayan and Tibetan uplands. In the Himalayas the Darjiling

Railways creep up to an elevation of over 7,000 feet, while the road to Tibet turns the escarpments of the Upper Satlej at an altitude equal to that of Mount Blanc. On all the routes frequented by Europeans convenient bungalows, or wayside stations, have been constructed, either by the Imperial Government or by the feudatory States.

The canals serve less for passenger than for goods traffic. The Brahmaputra-Ganges delta as well as those of the Indus, Maha Naddi, Godaveri, Kistna and

Fig. 178.—Railways of India.
Scale 1 : 30,000,000.

Caveri, are all intersected by numerous navigable watercourses; while the lagoons and backwaters of both coasts, and the great canals of the Ganges and Panjab, are all available for the transport of merchandise. Excluding the rivers, these navigable highways have a total length of about 13,000 miles, and represent an outlay of over £20,000,000. The sea-borne traffic has also acquired a vast development, and is greatly promoted by the magnificent fleet of the Peninsula

and Oriental Company, comprising about fifty steamers of nearly 150,000 tons, exclusive of tenders, tugs, and launches.

Although exceeding £140,000,000 yearly, the general trade of India is of far less importance than might at first sight be supposed. While relatively greatly inferior to that of France or Australia, it only slightly surpasses that of Italy, and is actually exceeded by that of Belgium. At the same time the rate of increase has been very rapid, especially during recent years, the exchanges having far more than doubled between 1861 and 1881. About half of the whole amount is represented by the export of cotton and the import of woven goods from England. The export of opium places China in the next rank, after which comes France, which imports from British India oleaginous seeds, indigo, silk, cotton, and coffee to the yearly amount of £6,000,000, and maintains a direct trade of over £1,200,000 with her own possessions. The commerce is steadily increasing with Australia, which forwards copper, horses, and other produce to the annual value of £1,000,000 in return for rice, tea, coffee, estimated at £24,000,000. The difference, paid almost exclusively in silver, contributes to maintain the relative value of this metal in the money market, while the rate of the exchanges is uniformly in favour of Great Britain.

About three-fourths of the shipping engaged in the Indian sea-borne traffic also belongs to England, which, by building steamers specially adapted for the Suez Canal route, has nearly monopolised the carrying trade of the East. The number of vessels plying between Great Britain and the Indian seaports has no doubt diminished during the past twenty years; but their capacity has increased, and steamers having largely replaced sailing vessels, the number of trips has, of course, proportionately augmented. On the other hand, the coasting trade with East Africa, Socotra, and Madagascar is almost entirely in the hands of Banian merchants. Through the Irrawaddi a considerable traffic has been developed with Burma; but the exchanges with the other frontier states of Afghanistan, Kashmir, Nepal, and Tibet are relatively of small account.

Caste.—Religion.—Social Progress.

The constantly increasing commercial relations of the interior have hitherto tended little to efface the caste distinctions, which have become the best-observed dogma of the national religions. Thus, broken into a thousand social fragments, the Hindus nowhere form a compact nationality, bound together by common interests and inspired by the same political aspirations. It seems to be now placed beyond doubt that the assumed primordial division of the people into four classes or "colours"—those of the fair Brahmans or priests, of the red Kshatryas or warriors, of the yellow Variyas or traders, of the black Sudras or labourers—is a relatively modern theory, due to the commentators of the sacred writings.* Such regular stratifications of Hindu society never had any real existence, and at all times the endless contrasts produced by the various professions and pursuits must have

* Muir, "Sanskrit Texts on the People of India."

caused a great diversity of classes, rendering any systematic classification impossible. The classic writers, although acquainted only with a portion of the northern plains, speak not of four, but of seven castes; yet at the same time four distinct groups

Fig. 179.—Types and Costumes—Banjari Men and Women.

alone can now be recognised—the Brahmans, the peasants, the traders, and the artisans.

Even the ruling caste itself, supposed to have sprung from the head of Brahma, is made up of numerous subdivisions with no community of origin, engaged in different pursuits, and often even refusing to hold intercourse with each other. Those officiating as priests are few in number, and interest themselves chiefly in ceremonial subtleties and questions of precedence. The Brahmans of Audh refuse

to intermarry with those of Bengal, and will not even eat with them. In many places the Brahmans have become labourers, porters, servants; some are contemptuously known as "Potato-growers," some as "Jungle Brahmans;" some are descended from fishers or blacksmiths, while others are engaged as police agents. In some districts the Sudras have been created Brahmans; in others, the local aristocracy have maintained their rights, and have extorted from the intruding Brahmans the privilege of wearing the sacred thread.

Still greater are the ethnical distinctions amongst the other social divisions. Pure Kshatryas are nowhere to be found, notwithstanding the pretensions of the Rajputs to this origin. The various Baniah, Marwari, Bangari corporations, not to mention the Jainas, who do not even profess a Brahmanical religion, keep entirely aloof from each other, without recognising the existence of the pretended Vaisya class. Sudra also is a mere generic term applied to the countless castes and sub-castes outside those of the nobles and traders. In its original sense of "pure," this word seems to have designated, not people of inferior caste, but the mass of the Aryan nation, as contradistinguished from the "impure Dasya aborigines."

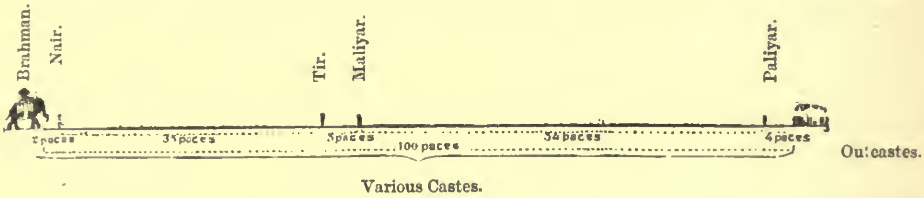
Outside these thousands of recognised associations, there are millions of "outcastes," without race or rights, and whose very shadow may suffice to pollute. To these the Europeans wrongly attributed the term Pariah, which belongs to a distinct group of thirteen castes included in the right division. The true outcastes are known in the central provinces as Kanjars, in Cochin and Travancore as Paliyars, and in the sacred books as Chandala. These are the scavengers, who live on carrion, who dwell in kennels, who may be struck or even killed with impunity. The two extremes of society are the Brahmans and the Chandalas, the former heirs of all things, the latter without rights of any kind, herding with the beasts of the jungle and forbidden to approach within 100 paces of the Brahman. This distance varies from caste to caste, but is everywhere strictly regulated according to ancient usage. Before the British rule death was the penalty for violating these regulations, and even now soldiers of the Nair caste cannot approach their prisoners of inferior birth.

But so ingrained has the spirit of caste now become, that the Christian neophyte refuses to eat with the priest by whom he has been converted, and the father closes his door to the son who has travelled abroad, and thereby lost caste. Formerly suicide was the only resource of a Brahman thus rejected, and in order to recover their caste privileges rich Hindus were obliged to do penance for years, and make offerings of half their substance to the priests. But this heavy yoke is being slowly eased, and its prescripts are daily growing less rigid. In the north, where society received a shock from the Mohammedan conquest, class distinctions have become far more obscure than in the south, where the people have remained under the undisturbed authority of the old laws. The great moral revolution brought about by Buddhism has also left deep traces, and since then analogous movements have taken place. Thus, in the fourteenth century, Kabir endeavoured to unite rich and poor in the common worship of an "inner God," at once Allah

and Rama, who imposed on his followers no precepts except that of mutual love. Castes have even disappeared in some districts, where numerous sects have proclaimed the principle of universal equality. Secret societies have even been formed, composed of all castes, whose members observe the prescribed usages by day, but who at night associate together. The rich traders also repeat that "their caste is in the cash-box," while the masses are being perceptibly transformed under the influence of instruction and economic changes.

Every conceivable form of fetichism and animism is found amongst the peoples of Bengal. Trees, stones of fanciful shapes, strange objects whose nature is unknown, useful and noxious plants, domestic animals and wild beasts, the souls of benefactors, or of dreaded oppressors, symbols of every kind, gods known and unknown, all are equally worshipped. New divinities are even continually added to the multitudinous Hindu pantheon. But the most striking feature of this natural religion, as revealed in the old writings and practised by the rural population, is the veneration paid by the Aryans to the firmament traversed by sun, moon, and stars, the ever-shifting scene of night and day, where the cloud floats in mid-air, where the lightning flashes and the thunder-crash is heard. Here is the origin

Fig. 180.—Prescribed Distances between the Castes and Outcastes.



of the whole Vedic cosmogony, the main source of classic mythology. The ganga or rivers, which distribute the beneficent waters, are worshipped almost as highly as the heavens whence they descended in the form of rain. In this tropical land, where all the humid regions were formerly overgrown with dense forests, trees also naturally became objects of veneration. The banian is regarded as a sacred temple in whose trunk the sinner dwells for a period, and is thus "born a second time." Special honour was paid to the lotus, which was taken as the emblem of all living things, of everything expanding in beautiful and regular forms. This lotus-worship spread with Buddhism throughout Java, China, and Japan, and by the Egyptians dwelling on the banks of the fertile Nile the same plant had been adopted as the symbol of the universe.

The old animal-worship has also been perpetuated in modern India. The sacred ox, marked with Siva's trident, is a familiar object in the southern and western cities; legends of the snake-gods and man-tigers survive in every jungle village, while the serpent carved in stone guards all the hamlets of Mysore. Thousands of Hindus still bow the knee to the fatal cobra, and in Behar the English officials in vain set a price on the head of the destructive wolf; for here, as elsewhere, "fear made the gods." Hence such epidemics as small-pox and cholera rank amongst the most venerated deities, while the very dead become superior beings, to be pro-

TEMPLES AT PATAN.

pitiated by oblations. But amongst the myriads of spirits there still remain so many that get overlooked, and consequently seek vengeance on the living! Air, water, forest, every place is infested by these accursed rakshasa, which in the gloom hover about in search of their prey. Hence the Hindu travels by night only under compulsion, and after exhausting all the forms of incantation taught him by the priest. He is then fortunate in meeting a European, for these evil spirits avoid those who disbelieve their power.

But of all the members of the Hindu pantheon, Siva, or Mahadeo—that is, the "Great God"—has the greatest number of votaries. In their eyes he represents, not the principle of destruction alone, as has been supposed, but also creation and preservation; for he is the supreme god endowed with all the energies of birth, life, and death. Hence his "20,000 names" express the whole series of faculties, from perfect mildness to pitiless ferocity. Nevertheless he is invoked chiefly as a god of terror, and so recently as the beginning of this century human sacrifices were offered to him in many places. The Thugs also—that is, the sanguinary priests of Kali, female personification of Siva—constituted a whole community of murderers, the dying breath of whose victims rejoiced the queen of heaven. And now that these frightful sacrifices have been suppressed, they present wreaths of flowers and sweetmeats to Kali, who presides over death and is worshipped by night, but who is also identical with Parvati, goddess of love and beauty.

Buddhism, which has spread throughout the surrounding lands eastwards to Japan, has almost completely disappeared from the Peninsula, having held its ground as a distinct religion only in the Himalayan valleys and in the south of Ceylon. The doctrine of Shakya Muni, incomparable but mainly mythical model of benevolence, devotion, and pity for suffering nature, represents a phase of humanity essentially distinct from that which answers to the aristocratic ideal of the Brahmans. The latter are concerned with their own salvation alone, whereas Buddha, the popular teacher, studies the happiness of all, even of the Chandalas and irrational animals. All men were called to the priesthood, but with this priesthood the hierarchy was restored, caste revived and even extended to new regions. As the religion of the poor Buddhism had triumphed; when adopted by the rich it fell. The Brahmans—that is, the privileged classes—again seized its temples and banished its priests. But no systematic persecution seems to have been organised, and according to most authorities Buddhism gradually died out between the seventh and ninth centuries of the new era.

With this system are evidently associated the Jainas, now chiefly centred in Gujarat and Marwar. Their founder, Jaina (Jina) the "Holy," the "Great Hero" (Mahavira), the "Conqueror of Vice and Virtue," seems to have flourished in Behar about the time of Buddha, and his followers at one time prevailed in Southern India. The Jaina writings are still the most remarkable works in Dravidian literature. No other sect has carried so far the respect for all living things, from the venomous snake to the smallest animalcule. The exercise of benevolence sums up the "four duties" of the Jainas; yet as bankers and speculators they are disliked by the masses. Although few in numbers, by their spirit of

fellowship they have acquired a disproportionate share of the wealth of the land, and some of their groups of sanctuaries, such as those of Palitana, Mount Abu, Sunagarh, Parasnath, are amongst the most magnificent in the world.

Of foreign religions, Islam alone has gained a large following in the Peninsula, where it now numbers about one-fifth of the inhabitants, thus constituting Great Britain "the first Mohammedan power in the world." The Mussulmans are in a

Fig. 181.—Jaina Temples on Sunagarh.

majority only in the north-west, on both sides of the Indus. Elsewhere they are powerful, chiefly in Bengal, and in the seaports of the southern seaboard, while Haidarabad, the largest of the feudatory States, is governed by a Mohammedan prince. But most of these Mussulmans, and especially those of Bengal, are merely nominal followers of the Prophet. In many Gangetic villages both religions share the same temples and ceremonies, the only difference being the forms of prayer uttered by the priests of the respective cults. Nevertheless, these cults have given

rise to differences in social habits and pursuits, and at present nearly all the *Lascars*, or seafaring element, are Mohammedans, whatever be their ethnical affinities. Dissensions even occasionally break out between the rival sects; temples and

Fig. 182.—Chief Places of Pilgrimage in India.

Scale 1 : 24,000,000.

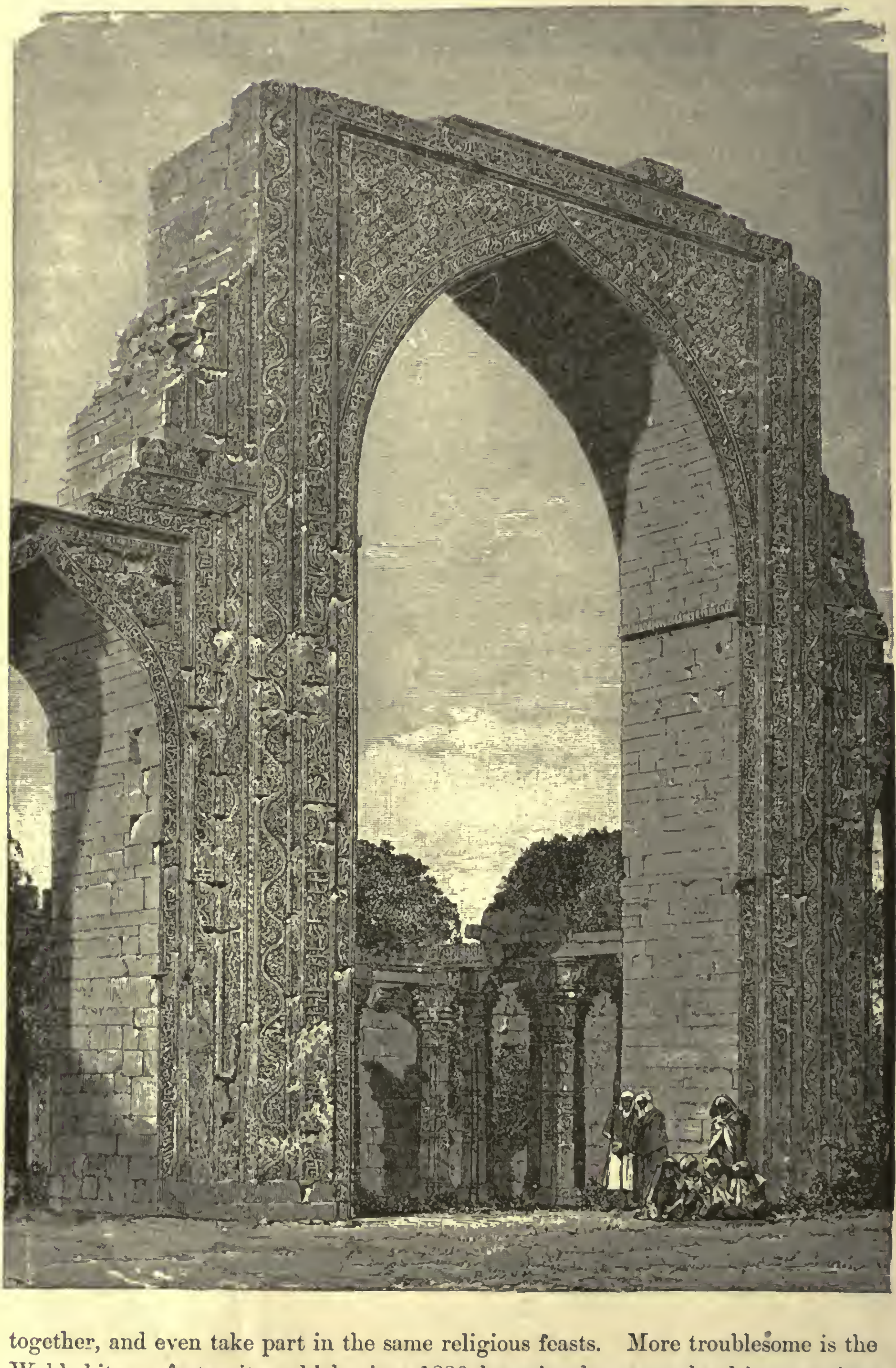
S., Sivaite; V., Vishnuite; K. Krishnaite; J., Jaina; M., Moslem; Chr., Christian.

600 Miles.

mosques have been alternately sacked, and in the crowded bazaars throats have been cut in the name of Allah or of Vishnu.

More than nine-tenths of the Mussulmans, who appear to be increasing at a relatively more rapid rate than other sectaries, belong to the Sunnite faction. The Shiahs are centred chiefly in Kashmir and Bombay; but all live harmoniously

Fig. 183.—The Kutal Mosque, Delhi District.



together, and even take part in the same religious feasts. More troublesome is the Wahhabite confraternity, which, since 1830, has stirred up many local insurrections

against the British authorities, and which has consequently been placed under special police supervision. A favourite subject of discussion amongst them are such delicate questions of abstract policy as, "Are we bound to rebel?" "Is India a country of war, or of Islam?" "Do we owe obedience to the Kalif, or to the English raj?"

That Christianity has long been established in India is evident both from continuous tradition, from the crosses and symbolic images of the Trinity, and from Pehlvi inscriptions found on Mount St. Thomas and elsewhere. The early Italian missionaries of the fourteenth century were surprised to find Christian communities in the Malabar cities regarded as socially equal to the Brahmans, and occupying high positions in the State. After the arrival of the Portuguese, wholesale conversions were furthered by the secular arm, and at the Synod of Udiampur, near Cochin, in 1599, three-fourths of the "Nazarenes" joined the Roman Church and adopted the Latin rite. But persecution, intestine strife, and schism soon ensued, and large numbers returned to the Hindu religions. At the time of the Dutch conquest of Ceylon (1650), the Singhalese were "officially" Christians. But under the new régime of administration, the King of Kandy was able to bring back the Buddhist priests, who purified the temples and restored the old rites. Then the Catholic missionaries were banished in their turn, and the Catholic religion remained proscribed till the proclamation of universal tolerance under the British rule, early in the present century. But by that time its adherents had been reduced from over half a million to 66,000. On the mainland the decrease was mainly due, as in China and Japan, to the rivalries of the Jesuit, Augustinian, and other religious orders. By accommodating themselves to local usages and caste distinctions, the Jesuits had always been the most successful in the work of conversion. The Vishnuite or Sivaite catechumens were allowed to retain their distinctive signs, the statue of the Madonna was arrayed like the idols of Bhavani, and separate masses were celebrated for the several communities of different castes.

At present the Catholic and Protestant missionaries are chiefly engaged amongst the poor, the low castes, and the wild tribes of the interior, but everywhere with indifferent success. The first converts fancied they would be received into the caste of their teachers; but being quickly disenchanted, and perceiving that "to become a Christian was to become a pariah," they mostly returned to the cults of their fathers. Although there are altogether about five thousand Protestant evangelists of all denominations, their flocks scarcely number half a million collectively. About half of these are centred in Madras, where they consist almost exclusively of Portuguese Catholics and Nestorians, who have gone over to the religion of their new political masters. Not more than one-sixth of all the proselytes belong to the middle and upper castes, and a large proportion are the so-called "rice Christians," converted during the famines to keep from starvation. In the seaports they are mistrusted by the traders, who prefer to employ natives that have preserved the religion of their forefathers. On the whole, the civilised Hindus are either indifferent or hostile to Christianity, regarding it as a system of miracles, which might just as well take place in their own mythologies. For them Christ is at most their own Krishna, or perhaps a new avatar of Vishnu.

But if Hindus cannot be gained over to the Christian faith, a rapid internal dissolution of the native religions is none the less going on largely under the influence of European ideas. The places of pilgrimage continue to be yearly less frequented; the holy cities are yielding in importance to the centres of industry; the crumbling temples are no longer restored; religious indifference is spreading amongst the masses, while the educated, rejecting the supernatural and retaining

Fig. 184.—Catholic and Protestant Missions in India.

Scale 1 : 30,000,000.

Missions.

Catholic. Protestant. Catholic and Protestant.

600 Miles.

the moral precepts alone of a vague deism, have begun to regard the national beliefs merely as a historic evolution. The *Brahma-samaj*, the latest phase of Hindu monotheism, differs in name only from English unitarianism. Although embracing but few open adherents, it has its value as an index of the onward movement of thought, corresponding to the progress of public instruction and morality.

How great has been this progress is shown by the utter extinction of suttee

since 1862, by the rapid suppression of female infanticide, the cessation of human sacrifices, and the general spread of education. During the last fifty years the number of pupils has increased a hundredfold, and in 1875 about eleven millions could at least read in one or other of the native languages. In some districts one-fifth of the children attend the schools, and recently the Sikhs have petitioned Government to introduce the compulsory system into the primary schools. These schools are supported by rich and poor alike, the State contributing little more than 10 per cent. of the whole amount. Another symptom of progress is the rapid increase in postal and telegraphic correspondence. A gratifying feature is also the increasing social freedom and growing intelligence of the women. Many are now engaged on

Fig. 185.—The Princess of Bhopal.

the press or in teaching, and the Princess of Bhopal has recently taken part in public affairs in defiance of the traditional etiquette condemning ladies of rank to total seclusion.

The popular literature consists, at least in the south, mainly of astrological almanacs and religious treatises. Nevertheless amongst the five thousand works yearly issued in the Peninsula there are many important scientific memoirs, while the masterpieces of European literature are regularly reproduced in the chief native tongues. To the late Toru Dutt are due the best English translations of contemporary French poets.* As in other civilised countries the periodical press is steadily increasing in number and influence. But a great obstacle to the development of a

* "A Sheaf Gleaned in French Fields." Bhowanipore, 1876.

Hindu nationality are the numerous languages and writing systems current throughout the Peninsula. About six million natives understand English, and thousands speak it with remarkable elegance. But as heir to the Great Moghul, the Government favours the use of Hindustani, while most of the Hindu national party encourage the study of Mahratti, Bengali, Tamil, Telugu, and the other local tongues. Sanskrit also, hitherto regarded as a dead language, has in recent years been revived as a medium of correspondence amongst the lettered classes. The Maharaja of Udaipur, representing the Solar race, has lately ordered all official documents to be published in Sanskrit.

Government and Administration of India.

The Queen of England, solemnly proclaimed Empress of India (Kaisar-i-Hind) at Delhi on January 10, 1877, is represented on the spot by a Viceroy chosen by the Cabinet; but the seat of power is in London. The Act of 1858 abolishing the East India Company and transferring its vast possessions to the Crown, has intrusted the direct government to the *Council of India* under the presidency of a Secretary of State. The members of this Council are appointed by the Crown for ten years, and in the absence of the Minister its deliberations are directed by a Vice-President.

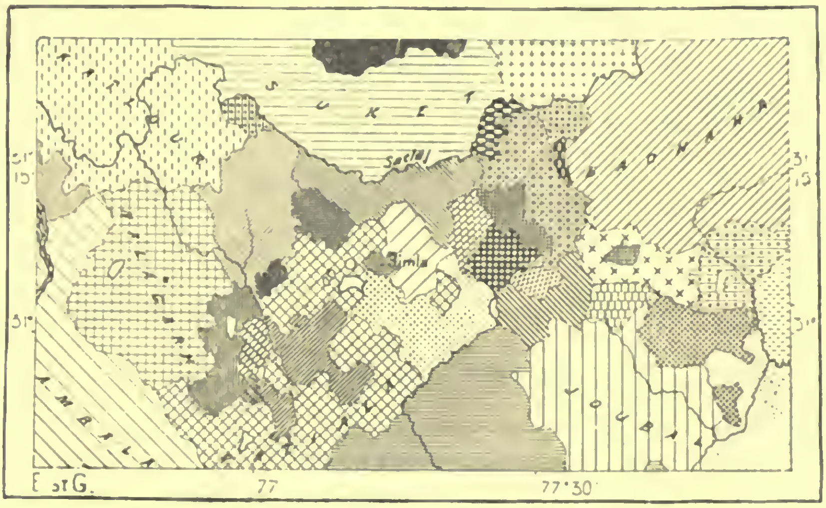
The Viceroy, or "Governor-General," is assisted by a Council of six members, besides the Commander-in-Chief, all named by the Crown, as are also the governors of the various provinces. The affairs of the "supreme government" are distributed over the six departments of finance, war, public works, the interior, agriculture and exterior, each under a member of Council assisted by a special secretary. The exterior is reserved to the Governor-General, who controls the relations with Bhutan, Tibet, Nepal, Kashmir, Afghanistan, and Burma. He also instructs the Residents at the Courts of the feudatory States, and administers the States temporarily sequestered. He also appoints for two years the English and native members of the Legislative Council; nor can any weighty measures be discussed or adopted without his approval. On the other hand the Viceroy himself submits all his acts to the English Minister, and his decrees issued in cases of extreme urgency have force of law only for six months.

The same administrative machinery is applied in all its essentials to the two Presidencies of Bombay and Madras, while a more military system prevails in the Panjab, Audh, the Central Provinces, and Assam. The old historic limits being still largely retained, the administrative divisions differ greatly in size and population. Enclaves and isolated tracts of all dimensions are scattered along the confines of the great provinces, and the most carefully prepared maps would fail to reproduce the intricate frontier lines in such regions as Kathywar, Rajputana, Sirhind, and the Satlej Valley. Ceylon is not administratively included in the Anglo-Indian Empire; but, on the other hand, this vast political system comprises many outlying dependencies, such as British Burma, the Andaman and Nicobar Archipelagoes, and Aden. The agencies established at Kelat, Mascat, Bagdad, and Zanzibar are also at present attached to the Calcutta government.

The so-called "covenanted civil service," which controls 1,250,000 functionaries of all orders, consists of 928 officials, of whom seven only are natives. They are grouped in two great divisions, administration and justice, and in return for liberal salaries are charged with heavy responsibilities. Many districts with 100,000 inhabitants are governed by a single Englishman possessed of almost unlimited power, and with no check except that of his conscience in administering laws of extreme severity.

Although of a mild temperament the Hindus are extremely fond of litigation. Most suits arise out of cases of theft and fraud, or else disputes about property. A case was heard in the court of Point de Galle which turned on the claim to the two hundred and fifty-second share in a coconut palm. Imprisonment for debt

Fig. 186.—States of the Satlej Basin.
Scale 1 : 1,300,000.



30 Miles.

has not yet been abolished, and questions relating to marriage, adoption, wills, inheritance, division of property are still constantly decided by the intricate code of Hindu tradition, or by the laws of Akbar. The precedents supplied by the decisions of the Company have been codified, and every year new laws are added to the old. In presence of this confused and contradictory jurisprudence the judge would often find it impossible to pronounce a verdict, were he not armed with the power of summarily deciding disputed points, without appeal to a higher court. Although misdemeanours are relatively less frequent than in the West, the criminal code is severe, and still recognises the use of the lash. Convicts are now sent to the Andaman Islands, and the average prison population in the Peninsula is estimated at 120,000, of whom not more than 5,000 or 6,000 are women. Those condemned to various terms of detention receive their sentences with remarkable equanimity, and the old saying that "the robbers of the Company resemble bridegrooms" still holds good.

Before the Sepoy mutiny the European troops formed one-fourth, but since then they constitute over a third of the Imperial forces. The whole army scarcely exceeds 150,000 men, which may be taken as an indication of present stability. Every precaution has at the same time been taken to render this army as effective as possible, while securing the material superiority to the numerically inferior European element. Since the insurrection few of the Brahmans of Audh have been admitted into the service, and recruits are drawn chiefly from the more trustworthy Sikhs of Panjab, Pathans and Rohillas of the Upper Ganges, and Nepalese Ghurkhas. A very small portion of the artillery has been left in the hands of the native troops, which are divided into the three armies of Bengal, Bombay, and Madras, all differing in organization, origin, and even in speech. In the first Hindustani is chiefly current, in the second Mahratti, in the third Telugu. Most of the privates engage for a long term of years, and the native officers serve first in the ranks of the British regiments. Nearly all the men in the Madras, and most of those in the Bombay army, are allowed to marry, and as their families accompany them in the field, the cantonments become military towns sometimes covering an area of 15 or 20 square miles.

Besides the Imperial forces, the feudatory States maintain an aggregate of about 300,000 men, with 65,000 horses and 5,250 guns. Of these native armies the largest is that of the Nizam, consisting of 37,000 infantry, 8,200 cavalry, and 725 guns. But the Imperial government proposes henceforth to limit the armaments of the vassal powers, while interdicting the use of the most improved weapons and instituting a more regular inspection of their magazines and arsenals.

Compared with that of most European States the financial condition of India is sound. One-fifteenth of the revenue suffices to meet the charges of the national debt, which in France and England absorb a third. But, on the other hand, the people are relatively much poorer, so that, according to Fawcett, an income tax of one penny weighs as heavily on the Hindu as twenty shillings on an Englishman. Hence the imposts, light as they are, represent weeks and even months of labour; for the annual income of the country is estimated at from £320,000,000 to £400,000,000, or less than 16s. per head, while the taxation is at the rate of nearly 7s. per head. Of the public debt, nearly £40,000,000 are credited to the suppression of the mutiny, and over £20,000,000 to the late Afghan war. The chief source of revenue is the land-tax, payable either by the zemindars, as in Bengal; by the communes, as in the North-west Provinces; or by the cultivators directly, as in Madras and Bombay mainly. From this source the average yield is about £22,000,000, while the salt and opium monopolies represent over £6,000,000 each.

One of the gravest political problems of our times is assuredly the position of England in Asia. Even the "Eastern question," which has so often shaken the world, and which has already cost the lives of millions, is a mere prelude to the far more momentous question of Central Asia. The partition of Turkey itself is but a small matter compared with the partition of the Eastern hemisphere. Meantime it must be confessed that England rules at present by force and prestige alone. In a region split up into a thousand social fragments, without political coherence

and lacking all sentiment of a common nationality, this would not certainly be

Fig. 187.—Citadel of Attock and Bridge of Boats over the Indus.

a difficult task for the imperial race whose sway overshadows the globe. But it is

not merely a question of maintaining a footing in the country itself; its approaches have also to be safeguarded from foreign aggression. Formerly, when the overland route was difficult, and when the region lying between Central Europe and India was inaccessible to large armies, and almost to trade itself, the highway to Southern Asia lay round the Cape, and the struggle for supremacy had to be fought out in the Peninsula itself. To the Dutch and Portuguese succeeded the English

Fig. 188.—Disputed Territories between England and France in the Eighteenth Century.
Scale 1 : 20,000,000.

Territories formerly disputed. Present French possessions.

300 Miles.

and French, who contended during the last century for the possession of Bengal and the Dekkan. After the overthrow of the French, the outer Oceanic route remained in the hands of the English, who held the Cape, Natal, Mauritius, and who control Zanzibar. But the more direct Mediterranean route soon acquired more importance, and at the close of the eighteenth century the struggle between England and France was resumed for the possession of Egypt, intermediate station

between the East and West. After eighty years of vicissitudes the question has again been decided in favour of England, which now commands the direct maritime highway by the formidable strongholds of Gibraltar, Malta, Alexandria, and Aden.

But these very conquests entail the necessity of further advances. In the near future the sea routes will no longer suffice, and will lose much of their importance as soon as the trunk line of railway is completed across the Old World through Constantinople, Herat, and Delhi. Towards the North-west frontier, where this main line must penetrate, the English have concentrated most of their cantonments and strongholds, such as Firozpur, Ludianah, Jallandar, Lahore, Attock, and Peshawar. From this point the Iranian plateau has already been repeatedly penetrated by British forces, and English and Russian diplomacy are now contending for supremacy in Persia. "Events cast their shadows before them," and England has already been compelled to occupy Cyprus and claim the protectorate of Asia Minor. May she

Fig. 189.—Projected Indo-European Railways.
Scale 1 : 120,000,000.

3,000 Miles.

not also have to seize the Anatolian plateaux, and become in the Euphrates Valley conterminous with Russia, which has already annexed the headwaters of the great Mesopotamian river? Her advanced posts would then become exposed to attack from the armed forces now massed in the entrenched camps of Transcaucasia. And even should she succeed in creating an unimpregnable frontier of nearly 2,000 miles along the Russian border, to Germany and Austria, successors of Turkey on the Danube, still belongs the European section of the future trunk line between Great Britain and the far East. Hence the necessity of prospective alliances not to be purchased without heavy compensations. At the same time it may be allowed that their mutual jealousies will never permit the great European powers to combine together in order to block England's nearest highway to her Eastern possessions. Hence her supremacy in Central Asia can be seriously threatened by Russia alone, and with such a danger a wise and far-seeing statesmanship will know how to grapple.

CHAPTER XIX.

INDO-CHINA.—GENERAL SURVEY.—CHITTAGONG.—ARRAKAN.—ANDAMAN AND NICOBAR ISLANDS.

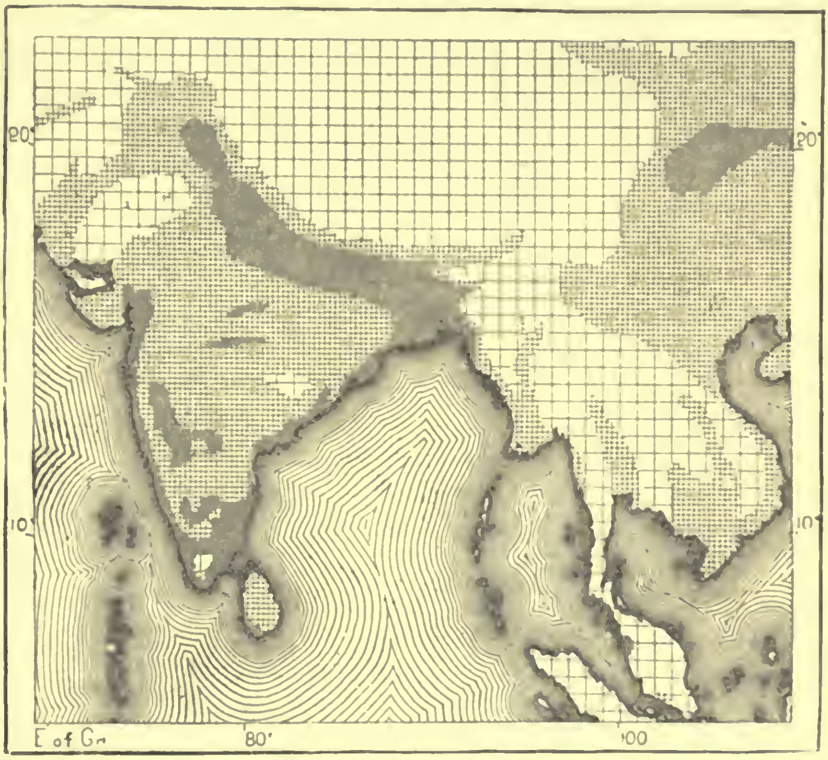
COMPARED with Cisgangetic India, this region may almost be described as a wilderness. With an area of about 870,000 square miles, it has a total population of scarcely 34,000,000, or less than 40 to the square mile, and this population is concentrated chiefly in British Burma, the Menam basin, and Red River delta. Yet it yields in no respect to the neighbouring peninsula in fertility and natural resources. There are no vast sandy wastes like the Thar desert, nor any boundless arid tracts, like the volcanic plateaux of the Dekkan. The soil is almost everywhere suitable for tillage, and the climate is sufficiently moist to nourish a rich vegetation. In mineral wealth and facilities for trade, Farther India is even more favoured than Hindustan. The seaboard is far more varied; commodious harbours indent the coasts especially of Malacca and Annam; the communications with China present few natural obstacles, while the whole peninsula occupies an advantageous position at the south-eastern extremity of the continent between the Indian and Pacific waters.

The remarkable contrast offered by the two peninsulas, apart from the historic evolution of their inhabitants, must be explained on geographic grounds by the different dispositions of their fluvial basins. With the exception of the Indus, the great rivers of British India flow east and west, parallel with the Himalayas, Vindhyas and Satpura range. But the Irrawaddi and Salwen, Menam, Mekong and other Transgangetic streams, run on the contrary north and south, parallel with the intervening mountain systems. The whole of Northern India also develops a vast plain stretching some 1,500 miles east and west, which has no counterpart in Indo-China, and which affords a magnificent natural theatre for the grandest movements in the evolution of mankind.

Before the construction of artificial routes, the primitive populations necessarily followed those laid down by nature. Thanks to the slope of the land, the inhabitants of Hindustan easily moved east and west along the river valleys, without undergoing any change either of climate, vegetation, or pursuits. But in Farther India the

migrating peoples, advancing from the plateaux of Yunnan southwards to the Irrawaddi and Mekong plains, experienced far more abrupt transitions of climate, flora and fauna, the whole aspect of nature here changing within a few degrees of latitude. Under such conditions, the northern tribes became enervated as they descended from High Asia, along the river banks down to the sultry, forest-clad or marshy plains of Indo-China. They were also prevented by the very form of the fluvial basins from expanding into compact masses; for no national unity on a

Fig. 190.—Comparative Population of India and Indo-China.
Scale 1 : 45,000,000.



Inhabitants per square mile.

0 to 20. 20 to 200. 200 and upwards.

Each square represents a population of 50,000 inhabitants.

1,200 Miles.

large scale could be developed in those relatively narrow river valleys, separated one from the other by lofty intervening ranges, and broadening out only towards the insalubrious deltas. Hence the greater part of the land here still remains in the hands of the aboriginal wild tribes, who constitute fully one-fifth of the whole population. But the European settlements on the seaboard have already introduced modifying influences, shown in the rapid increase of population, the reclamation of waste or forest lands, and the general spread of culture, radiating in all directions from the large cities on the coast. The parallel river valleys have

been connected at many points by routes carried across the intervening ranges, while efforts are being made by England in the west, and France in the east, to extend the main commercial highways from the coast towards the interior of China. Chittagong and Manipur, Rangun, Maulmein, Saigon, and Haipong are the starting-points of so many lines of traffic, destined one day to converge on the banks of the Yangtze-Kiang.

Chittagong and Arrakan.

The narrow western slope of the hills separating the Bay of Bengal from the Irrawaddi basin is politically included in British India, and even depends partly on the Bengal Presidency. Nevertheless this region belongs geographically altogether to Indo-China. The riverain tracts have hitherto been cut off from the interior by wooded hills occupied by fierce wild tribes. But this state of things is being gradually modified by the spread of culture, and Akyab and Chittagong must sooner or later become the outports for the produce of Upper Burma. Although still sparsely peopled, these coast-lands between the Meghna and Cape Negrais are rapidly increasing in wealth and population.

South of the heights draining through the Barak to the Meghna, the coast-lands are traversed by low parallel ridges running north-west and south-east. The highest summits occur on the main water-parting within the Burmese frontier, where the Malselai Mon, or "Blue Mountain," attains an elevation of over 7,000 feet, whereas the Rang-rang-dang, culminating-point of the British district of Chittagong, falls considerably below 3,000 feet. But notwithstanding the low elevation of these hills, the dense forests covering their slopes, the winding streams, marshy depressions, and jungle infested by wild beasts render this district extremely inaccessible. Near the coast stands the sacred hill of Chandranath, or Sitakund, much frequented by pilgrims, and acquiring peculiar sanctity from a bituminous spring supposed to have arisen from a blow of Siva's trident.

East of Arrakan the main range takes the name of Yoma, and here rises to heights of from 4,000 to 6,000 feet and upwards. But south of Sandoway it falls rapidly towards Cape Negrais, whence it is continued seawards by the Preparis and Coco Islands, the Andaman and Nicobar Archipelagoes. The most important pass is that of Aeng or An (4,700 feet), which was seized by the British in 1853. The prevailing formations are limestones and sandstones of the chalk and tertiary epochs, with some igneous rocks, but no volcanoes. The so-called cones of this region are all merely mud volcanoes, of which about thirty are found in the archipelago fringing the coast south of Combermere Bay. At the north end of Ramri Island six of these volcanoes, rising to a height of 40 feet, display great energy every alternate year or oftener, ejecting mud, inflammable gases, and stones to a great distance. These phenomena, which are said to occur chiefly during the rainy monsoons, are also at times accompanied by earthquakes ; but no true lavas are ever thrown up by the craters of Ramri or Cheduba. Petroleum springs bubble up in the neighbourhood, and flow even from fissures in the cones themselves.

The seaboard between Chittagong and Cape Negrais also shows evident signs of recent upheaval. About 1750, Round Island, lying east of Cheduba, was raised several yards during an earthquake, and the upheaval all along the coast is estimated at from 10 to over 20 feet. Earthquakes are still frequent in the Bhamo district and many other parts of Burma, where a true volcano, the Puppa, Paopa, or Pappa-dúng, rises south-east of Pagan, east of the Irrawaddi. Here jets of inflammable gas are

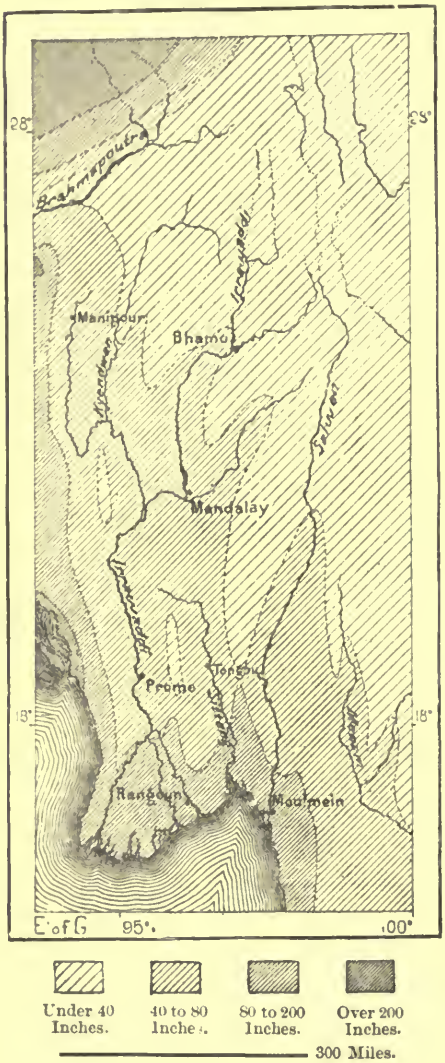
Fig. 191.—Ramri and Cheduba.

Scale 1 : 800,000.

also frequently met, and copious saline springs flow from the east foot of the Arrakan-Yoma. In many places these springs are associated with petroleum, and for centuries the naphtha wells have been utilised by the natives. Near Yenan-gyong, on the left bank of the Irrawaddi below Pagan, over 500 oil wells have been sunk to a mean depth of 200 to 250 feet, and of these about 150 yield a constant supply estimated at 12,000 tons yearly.

Being exposed to the full fury of the south-west monsoons the Chittagong and Arrakan coast enjoys an abundant rainfall, nowhere falling below 120 and in some places exceeding 240 inches yearly. But the eastern slopes facing the Irrawaddi receive but little of this moisture, which has been mostly precipitated during the passage of the rain-clouds across the intervening coast ranges. Hence numerous copious streams reach the Bay of Bengal between the Karnapuli and Cape Negrasi. But for the bars at their mouths they would be accessible to large vessels, and as it is the Kuladin (Koladyne), or river of Akyab, is navigable during the rains by ships of 400 tons for 70 miles, and by craft of 40 tons for 50 miles still higher up. Several of the deltas are connected by a network of shifting backwaters and channels, which offer a considerable extent of inland navigation. But the coasts are low and rendered dangerous by numerous reefs, some of which at the entrance of Combermere Bay have earned the name of the "Terribles."

Fig. 192.—Rainfall of the Irrawaddi Basin.
Scale 1 : 14,250,000.



The Tungthas, or "Children of the Hills," who occupy the Chittagong and Arrakan uplands, comprise a great many tribes, some independent, such as the Lushai, others, like the Bangi and Pankho, recognising the British rule, but exempt from tribute. The greater number, however, including the Tipperahs, Mrungs, Kumis, and Mros, pay a poll-tax through their respective chiefs. The Tungthas have generally preserved their old usages, and still worship the forces of nature, trees, streams, and mountains. From the surrounding Buddhists they have borrowed little beyond the practice of magic, and most of them offer sanguinary sacrifices to a sacred bamboo planted near the village. Human sacrifices in honour of Siva were continued longest amongst the Tipperahs, while the Ku tribe had the habit of torturing their victims.

The Maghs (Mugs), or Kiungthas, that is, "Children of the River," who form the bulk of the Arrakan population, have been long converted to Buddhism, and speak a rude Burmese dialect. They call themselves Miam-ma, that is, Burmese, and are distinguished by their frank and manly qualities from their Bengali neigh-

YENAN-GYONG, VIEW TAKEN FROM THE IRRAWADDI.

bours. Most of them are cultivators, and still clear the land by the primitive method of firing the jungle. Many are also engaged in trade, and these, like their Chakma kindred of Chittagong, are being gradually Hinduised.

The Khami, that is, "Men," occupy the upper Kuladan valleys, where they are divided into twenty-seven clans. Although of Burmese stock and speech, they still worship their ancestors, the genii of mountains and rivers, and make solemn offerings to them during seed time and before the monsoon. According to their complicate legal code crimes may be acquitted either by fines, or temporary or

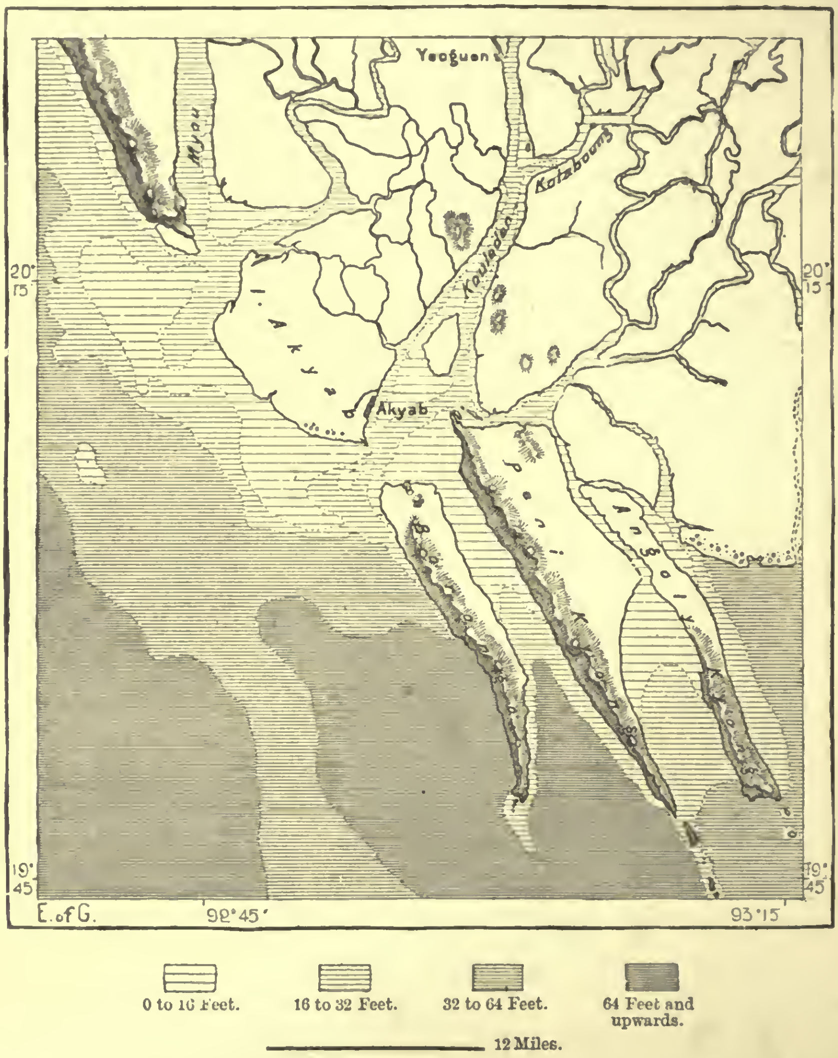
Fig. 193.—Chittagong and Mouths of the Meghna.
Scale 1 : 2,000,000.

permanent bondage. They are skilled agriculturists, and maintain active relations with the peop e of the plains. Far less civilised are their eastern neighbours, the Khyengs (Khyen, Ching), who dwell chiefly on the southern slopes of the Arrakan-yoma. They speak a distinct Burmese dialect, and worship trees, springs, and especially the storm-god, although in the towns many conform to Buddhist rites. Traces of matriarchal usages still survive. Thus the husband dwells in the father-in-law's house till the birth of one or two children, and the expressed will of either party is all that is needed for a dissolution of the union.

Traditionally the coast peoples have long been associated with those of Cisgangetic India. Even before the Buddhist period Hindu influences preponderated along the east side of the Bay of Bengal, and in the ninth century the Mohammedans reached this region. It was invaded during the last century by the Burmese, whose oppressive rule was exchanged in 1826 for that of the English. Since then

Fig. 194.—Akyab and Mouth of the Kuladan.

Scale 1 : 700,000.



the population has rapidly increased, and numerous Hindu and Chinese immigrants have settled on the plains.

Chittagong, or *Saptagram*, the *Islamabad* of the Mohammedans, who are here in a majority, forms a group of villages, bazaars, dockyards, groves and gardens stretching several miles along the right bank of the Karnapuli. Since the middle of the century it has become the chief entrepôt for the foreign trade of the Brahma-

putra basin, with which it communicates by a navigable canal. It will also soon be connected with the Bengal railway system. Unfortunately it lies in a swampy, malarious district, and the port is obstructed by a bar. The slopes to the east are now covered with extensive tea plantations, and here has recently been discovered the *lasiotis*, a new species of two-horned rhinoceros. South of Chittagong the busiest place on the coast is *Akyab*, at which point converge the largest number of navigable watercourses from the interior. Standing at the mouth of the large river Kuladan, Akyab also communicates by the backwaters of the delta and the channels of the neighbouring archipelego with nearly all the towns of Arrakan. When the routes across the Yoma range are completed, it cannot fail to become one of the chief outlets for Mandalay and the Upper Irrawaddi. Formerly the great depôt of the Lower Kuladan was the town of *Arrakan*, which was occupied by the English in 1826, and which is now known by the name of *Wrobung*, or "Old Town"; but owing to the unhealthy climate of this place the seat of government had to be removed 50 miles lower down the Kuladan to Akyab, which has since become a great rice mart. The other southern ports of *Kyuk hpyu* on Ramri Island, and *Sandoway* (Thandwai) on the mainland, are small trading-places of no importance.

The Andaman Islands.

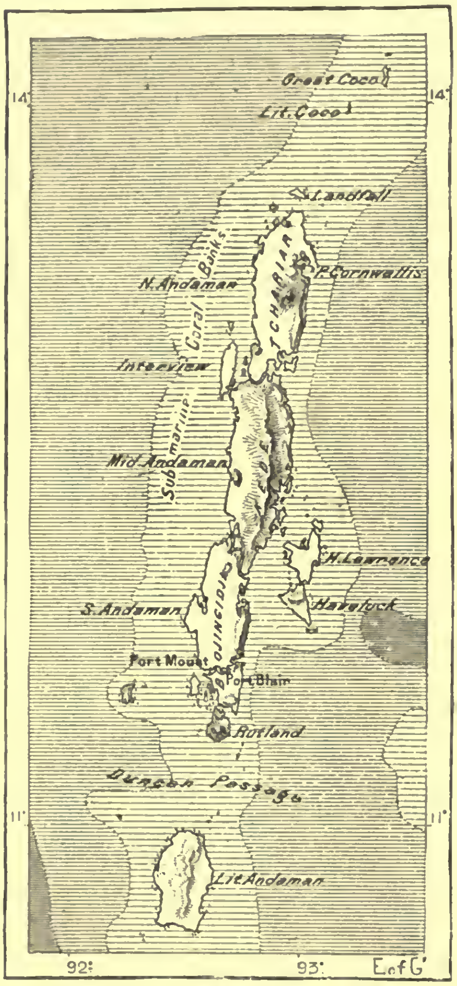
The long chain of islands describing a vast crescent 540 miles long, between Preparis and Great Nicobar, forms a seaward continuation of the Arrakan-yoma range. The insular and continental rocks are of the same formation, while the main axis of both systems runs exactly in the same direction. The submarine bank rising north of the Andamans between the Bay of Bengal and Gulf of Martaban, both over 1,000 fathoms deep, has nowhere more than 150 fathoms, and is traversed in its entire length north and south by a series of islets, reefs, and shallows. The Nicobar group also sweeps round to the south-east parallel with the general direction of the Indo-Chinese orographic system. The same direction is followed by Sumatra, Nias, and the adjacent groups, which themselves form a south-easterly extension of Nicobar. But although geographically dependent on Farther India, the Andaman and Nicobar Archipelagoes are politically attached to the Calcutta government.

The Andamans were probably known to the ancients as the islands *Agathou Daimonos*, or "of the Good Demon," while Ptolemy's Barussæ have by some been identified with the Lanka-balus, the name applied by the first Arab navigators to the Nicobars. Later on Marco Polo speaks of the Andamans under the name of Angamanaïn, an Arab dual form supposed to mean the "Two Angamans." But the first survey of the archipelago dates only from the foundation of a settlement on the east coast at the end of the last century.

Preparis and the two Coco Islands, rising above the bank between the Burmese coast and the Andamans, are mere rocks almost on a level with the sea. But the Great Andaman group forms a plateau over 150 miles long, with a mean breadth

of from 15 to 20 miles. It is divided by three shallow straits into four main sections, around which are grouped some smaller islands. Two only of the channels are navigable, and the whole mass is traversed by a chain of hills culminating in the north with the Saddle-peak (3,000 feet). These hills are entirely covered with dense forest, impenetrable almost as much to wild animals as to man himself. But the coco-palm, which gives its name to the neighbouring islets, and which abounds in Nicobar, is not indigenous either in Great Andaman or Preparis. Yet it thrives well in the Port Blair plantations since its introduction by the settlers.

Fig. 195.—Andaman Archipelago.
Scale 1 : 3,560,000.



0 to 640 Feet. 640 to 3,200 Feet. 3,200 Feet and upwards.
300 Miles.

The only wild mammals found on this group are a species of wild boar, some bats and rats, a wild cat, a squirrel, and an ichneumon very destructive to the plantations. Reptiles and birds are also much rarer than on the mainland; but the surrounding waters teem with marine life, including the coral-builders, whose irregular atolls endanger the navigation, especially on the west coast. Hence on the opposite side have been founded the little settlements of Cornwallis in the north and Port Blair in the south. The latter forms one of the finest harbours of refuge in the Indian Ocean.

Little Andaman, lying some 26 miles south of the larger island, forms a rectangular mass lower than its neighbour, but like it covered with a dense vegetation. East of it is the so-called "Invisible Bank," north of which rise the two volcanic rocks of Narcondam and Barren Island, the latter 1,000, the former 2,600 feet high. Narcondam, which is clad with a dense forest growth, seems to be extinct, while Barren Island has been quiescent since the beginning of this century.

The "Mincopies," as the few Andamanese aborigines are sometimes called, are divided into eight or ten tribes, whose long isolation and distinctive characteristics give them an exceptional anthropological interest. They are commonly grouped with the Oceanic Negrito stock, found in Malacca, the Philippines, and perhaps

elsewhere in Malaysia. Yet they show little resemblance to the Negro type except in their dark complexion; and although of small stature, varying from 4 feet 8 in. to a little over 5 feet, they are of very symmetrical proportions. According to Man, the various dialects differ so greatly that the northern tribes are quite unintelligible to those of the south. These dialects have been compared both with the Dravidian and Burmese languages, with neither of which they seem to show any real affinity. Although they go naked, the Mincopies take good care of their bodies, which they tattoo, paint with red ochre, and cover with fatty substances as a protection against noxious insects. They are skilled hunters and fishers, and daring navigators, often venturing in their outriggers 50 or 60 miles from the coast. They were formerly suspected of cannibalism, a practice which more careful inquiry shows to be absolutely unknown amongst any of the tribes. They are certainly subject to sudden fits of violent temper, but easily calmed by a kind word.

Fig. 196.—Port Blair.

Scale 1 : 245,000.

On the whole they may be described as a gentle, harmless people, given to much dancing, singing, and weeping, and strict monogamists. Since their contact with Europeans their numbers are said to be diminishing rapidly, and the whole indigenous population is at present probably less than 5,000.

The first penal settlements of 1791 and 1795 had been founded in the northern island. But notwithstanding the advantages of Cornwallis, the insalubrity of this fine harbour caused it to be abandoned for the equally commodious and far more healthy station of Port Blair, on the southern island. Here the new convict establishment, founded after the Sepoy mutiny, occupies the islet of Ross at the mouth, and near Hope Town on the north side of the harbour. But the more dangerous criminals are confined to Viper Island, towards the head of the inlet. Most of the 8,000 convicts enjoy a certain degree of freedom, and occupy themselves with fishing and agriculture in the neighbourhood of Port Blair and of Port Mouat, on the

opposite side of the island. Those condemned to hard labour are employed in erecting buildings, making roads, and clearing the jungle for the cultivation of tropical plants. Even in captivity the Hindus keep up the caste system, absolutely refusing to work or eat together.

The Nicobar Islands.

The Nicobars, which stretch north-west and south-east, comprise three groups: Car-Nicobar and Batti Malve in the north; Camorta, Nancowry, Katchall, Teressa, and some coral banks in the centre; Great and Little Nicobar with the adjacent islets in the south. The first European station was here formed by some French Jesuits, who occupied one of the central islands in 1711, but who were soon massacred by the natives. Then followed the Danes, who landed on Siambalong (Great Nicobar) in 1755, gave the whole archipelago the name of "New Denmark," and within three years abandoned the colony. In 1768 the German Moravians founded a station on Nancowry, and this island was, ten years afterwards, occupied for a short time by the Austrians. Later on the Danes again attempted to colonise the archipelago, but finally abandoned it in 1845. At last the English, who had already in 1807 officially annexed the group, reoccupied it in 1869, and attached it to the colony of Andaman.

Fig. 197.—Nicobar Archipelago.

Scale 1 : 3,000,000.

The Nicobars differ in many respects from the Andaman Archipelago. The southern islands evidently belong to an area of upheaval, and some of the wooded hills seem to be of volcanic origin. Yet Ball failed to discover any lava formations in the crater of the cone-shaped Bompoka close to Teressa. The whole group culminates at the northern extremity of Great Nicobar with a peak 2,400 feet, source of the river Galatea. As in the Andamans, the flora of the Nicobars is very rich and their fauna extremely poor. Some of the islets are fringed with coconut palms, while the "sea-coconut" of

the Seychelles flourishes in Katchall and several other places. The wild boar and buffalo roam over Camorta, but these animals seem to be descended from those let loose in the forests of that island. A species of deer is said to exist in Great Nicobar, where the dog has returned to the wild state. Apes, flying squirrels, and at least two species of venomous snakes are also met, besides two varieties of large saurians, and about forty species of birds.

The aborigines differ in every respect from the Andamanese islanders. The complexion is much lighter, the height above the average, the nose very broad, the eyes slightly oblique. Tattooing is not practised, but the skull is artificially deformed, as amongst the Flatheads of North America. Classed by some with the Malays, by others regarded as half-caste Indo-Chinese, these islanders are said by

Fig. 198.—TERESSA AND BOMPOKA.

Scale 1 : 500,000.

Roepstorff to resemble the Butans of Formosa more than any other people. Although apparently of a dull, apathetic temperament, they are fond of European finery, and prefer to everything else the tall "chimney-pot" hat. Hence this article, which confers the title of "Captain" on its fortunate owner, fetches a very high price, and as many as one thousand six hundred coconuts were paid for one of these coveted articles during the voyage of the *Novara* in 1858. But the title of captain is associated with no personal authority, for there is no tribal government of any kind, society being kept together solely by a spirit of mutual reciprocity.

According to the reports of the "Baju," or "Men," as the Nicobarese call

themselves, the forests of Great and Little Nicobar are inhabited by a race of

Fig. 199.—Landscape in Car-Nicobar—Village of Sawi.

orang-utans, that is, "Men of the woods," a savage people with long hair, who live on snakes, toads, and crocodiles. Their real name is Shobaeng, and according

to Roepstorff they have the flat features of the Mongolians, while Ball compares them to the Mincopies. A penal station, dependent on that of the Andamans, was founded in 1869 in the island of Camorta, north of Nancowry. Here is a fine harbour, with smaller havens on both sides of the strait flowing east and west

Fig. 200.—Roadsteads and Harbours of Nancowry.

Scale 1 : 193.000.

between both islands. In the district much land has been gradually brought under cultivation, and the forest clearings are now occupied by many Hindu convicts. These plantations have much improved the climate, and added to the resources of the islands, which formerly exported about three million coconuts yearly, chiefly from Car-Nicobar.

CHAPTER XX.

IRRAWADDI AND SALWEN BASINS.

MANIPUR, SHAN, AND KAKHYEN TERRITORIES, BURMA, PEGU, MARTABAN.

THE region stretching east of the water-parting which is formed by the Khamti, Singpo, Lushai, and Arrakan ranges, might seem at first sight to be naturally dependent on the provinces annexed to the Chinese Empire. Terrace lands of easy access rise gradually from the Burmese lowlands to the Yunnan plateaux, while the narrow Salwen and Irrawaddi valleys lead directly to the eastern provinces of Tibet. But, on the other hand, the plains of Burma are still more accessible through the seaboard to Cisgangetic India, whence civilisation was diffused eastwards from the earliest times of maritime navigation. Hence although the inhabitants of Burma are mostly of the same stock as those of the conterminous regions attached to China, their culture and religions have reached them mainly from India, with which they have been brought into still closer contact since the occupation of the coast-lands by the British. Little change, however, has been made on the northern frontier, where the trade routes are still often blocked by the wild tribes occupying the highlands between Burma and the Chinese Empire. A large part of Burma proper is still almost uninhabited, although the population of the provinces ceded to England has increased 34 per cent. during the last decade.

THE IRRAWADDI, SITTANG, AND SALWEN BASINS.

The Irrawaddi, which drains the whole of West Burma, is already a copious stream at its entrance into Farther India. Above Bhamo it is now known to ramify into two main headstreams, and in 1880 a native explorer, under the assumed name of Alaga, was sent to survey the course of the united stream as far as the confluence. He penetrated beyond the Burmese frontier to this point in 23° 43′ north latitude, and found that the western branch was here 500 paces broad, while the eastern, which he crossed at a ferry, had only a fifth of that width, and was moreover very shallow. Hence this can scarcely be the "large easterly river" spoken of, but not seen, by the previous explorers Wilcox, Burlton, and Lepper. Whether another considerable affluent joins the Irrawaddi from the

east still higher up cannot at present be determined, nor have any steps been yet taken to ascertain the exact volume of the main stream in this region. But at the confluence of the Mogung 60 miles lower down, in 25° north, Henny and Griffith have estimated the discharge during the floods at from 880,000 to 980,000 cubic feet per second, and at Bhamo, still lower down, it reaches 1,200,000 cubic feet. Yet on most maps the source of a river sending down such an enormous liquid mass is placed on the slopes skirting the south side of the Brahmakund basin.

Fig. 201.—The Irrawaddi above Bhamo.

Scale 1 : 176,000.

[illegible] Miles.

Below the Mogung confluence the Irrawaddi plunges into a narrow gorge where its bed is contracted to less than 160 feet at some points, with a depth of at least 250 feet and a velocity of from 12 to 15 miles an hour. Beyond Bhamo and the Taping confluence another gorge 200 feet deep marks the farthest point visited by the dolphin, and after receiving the waters of its great affluent, the Kyendwen, the great Burmese artery enters the plains which have been gradually created by its alluvial deposits. These deposits seem to begin above Prome, where a branch now traversed by the railway formerly flowed, probably to the Myit-ma-kha-chung (Hlaing), or river of Rangun, which winds along the foot of the Pegu-yoma water-parting between the Irrawaddi and Sittang basins. The heights which now rise in the midst of the plains above the present head of the delta were at one time rocky islets surrounded by the sea. But excluding the temporary water-courses flowing eastwards during the rainy season, the fork of the delta is now 130 miles inland as the bird flies, and 180 following the windings of the stream. The eastern branch, which keeps the name of Irrawaddi, or Airavati, that is, "Elephant River," continues to follow the normal southerly direction, while the Nawun, or western branch, flows along the foot of the Arrakan-yoma to the Bassein estuary

east of Cape Negrais. During the floods about a tenth of the liquid mass is discharged through this channel, and all the rest through the Airavati, which, however, is soon divided into several secondary branches. The whole region of the delta thus becomes cut up into a number of islands, whose outlines become modified

Fig. 202.—Irrawaddi Delta.
Scale 1 : 3,000,000.

with every fresh inundation, at least wherever the channel has not been fixed by embankments. At present there are nine chief branches between the Bassein and Rangun estuaries, and even beyond the latter the alluvial lands, intersected in all directions by watercourses, stretch round the Gulf of Martaban to the Sittang and Salwen deltas. But excluding these plains the Irrawaddi delta proper comprises

about 18,000 square miles of fertile land, consisting mainly of old argillaceous formations.

The discharge in August, that is, after the rainy monsoon, is seventeen times greater than during the dry season in February. At this period it scarcely exceeds 70,000 cubic feet per second, and on March 5, 1877, it fell to 46,000, or less than that of the Rhine and Rhone. Yet on August 20 of the same year it rose to 1,980,000, thus exceeding that of the Congo in its normal state. The mean dis-

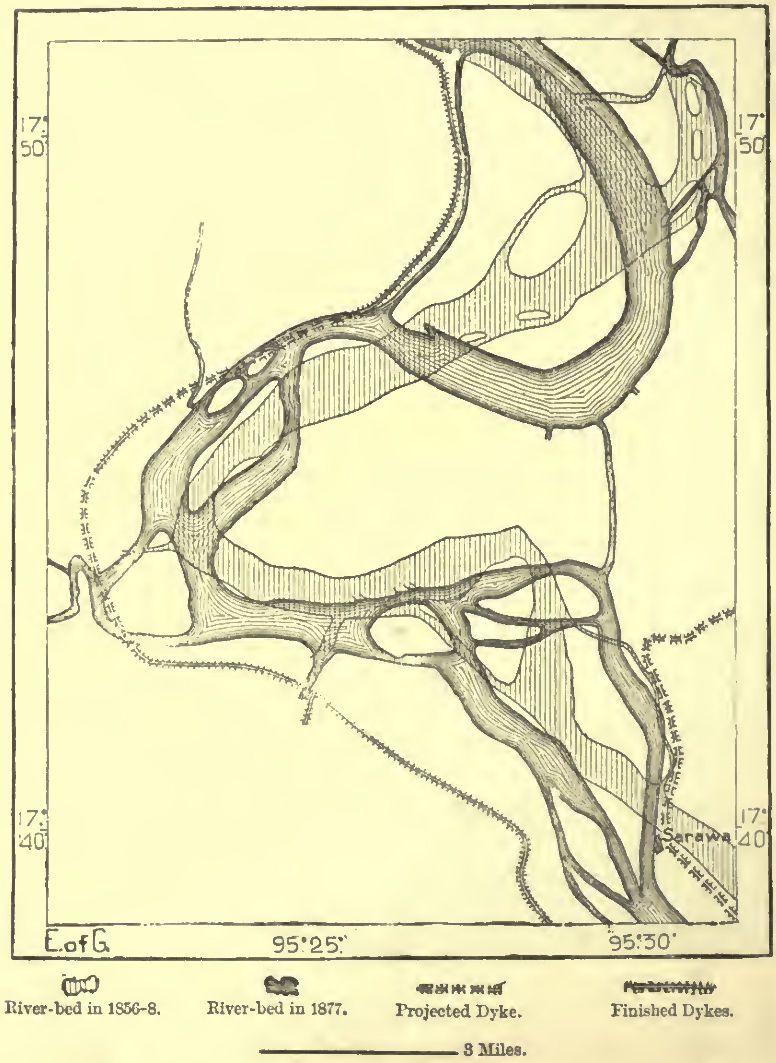
Fig. 203.—The Irrawaddi below Prome.

charge, according to the measurements regularly taken since 1872 at Saikhta, near the fork of the delta, is 480,000 cubic feet, or about the same as that of the Ganges. The hydrography of few rivers has been more carefully studied than that of the Lower Irrawaddi, since the occupation of Pegu by the English, who have felt the necessity of protecting the banks from sudden inundations, and draining the fever-stricken, marshy districts. A dyke 60 miles long, skirting the right side above the delta, intercepts the torrents descending from the Arrakan-yoma, and confines them

in a regular stream flowing parallel with the Irrawaddi to the Nawun branch. The head of the delta is also protected by a semicircle of embankments carried along the left bank of the Nawun and the right of the Irrawaddi. Unfortunately these costly works have everywhere had the effect of raising the bed of the river, and increasing the disastrous consequences of the inundations, whenever the embankments are burst. In 1877 a tract 500 square miles in extent lying east of

Fig. 204.—Shiftings of the Irrawaddi at the Head of the Delta.

Scale 1 : 200,000.

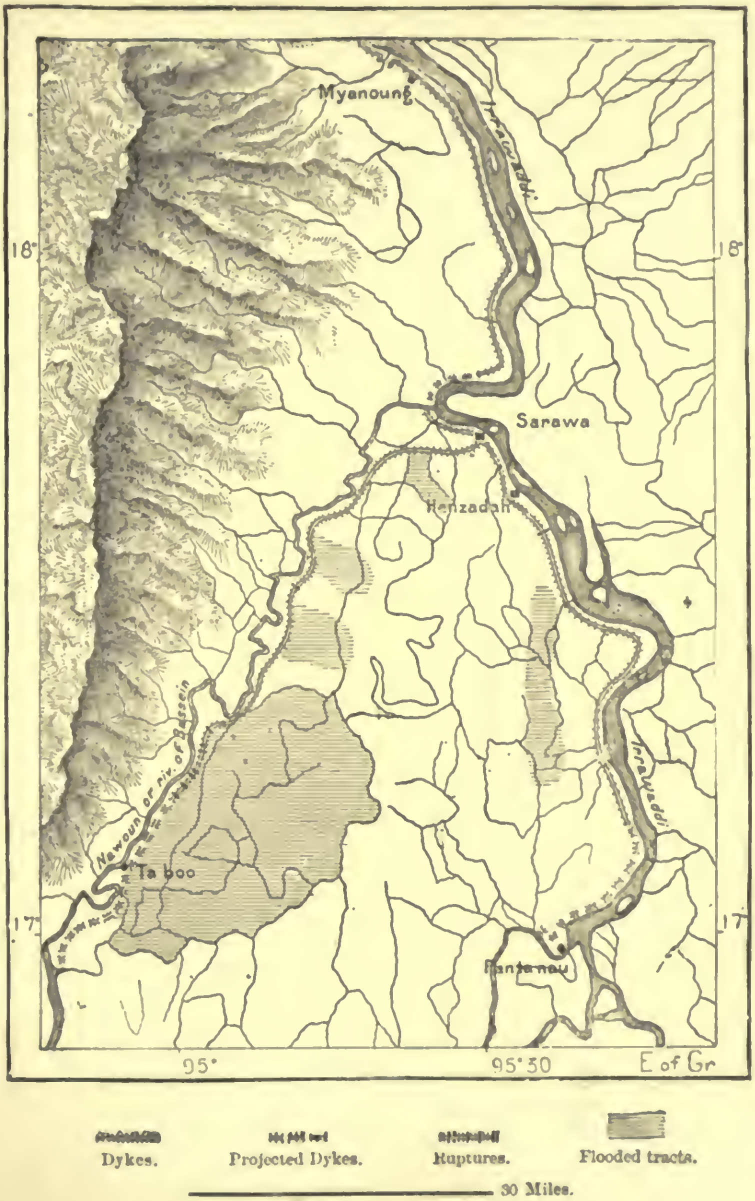


the Nawun, was thus transformed to a lake, and the whole delta became studded with numerous other lacustrine basins of less extent. The delta itself is yearly advancing seawards, and a submarine bank about 40 fathoms deep already stretches some 60 miles beyond the present coast-line. All the branches of the river

are obstructed by bars, so that large vessels can penetrate only at high water, which here rises 20 feet, and ascends the chief branch to Henzada, 120 miles inland.

The Pegu-yoma, which skirts the Irrawaddi delta on the east, is a low ridge probably belonging to the tertiary epoch, and not more than 2,000 or 3,000 feet in

Fig. 205.—Embankments on the Irrawaddi and Breaches made in 1877.
Scale 1 : 1,280,000.



mean elevation. Southwards it branches into secondary spurs with intervening valleys, each of which sends down a tributary to the Rangun estuary. Amongst these is the river of Pegu, which rises on the east slope. But the Sittang (Sittung),

or Palun, which traverses the long quadrangular basin formed by the Pegu-yoma and Punglung Hills, may be regarded geologically as the real continuation of the Upper Irrawaddi, for it flows in exactly the same direction as does this river between Bhamo and Mandalay. The Sittang drains an area of about 22,000 square miles, and after a course of 330 miles falls into the Gulf of Martaban. During the rainy season the network of channels and backwaters stretching round the gulf to Maulmein affords a total navigable waterway of over 360 miles for small craft. Here the rainfall occasionally exceeds 240 inches, and the whole seaboard is converted into a vast lake.

The highlands separating the Upper Irrawaddi and Salwen basins have been crossed only at a few points. In North Burma the transverse valley of the Taping has enabled Cooper, Margary, Gill, Szechenyi, Colquhoun and other explorers to make their way from the Yunnan plateaux over the water-parting down to the Irrawaddi at Bhamo. All describe this region as disposed in a series of parallel ridges running north and south, with narrow intervening valleys. Here one of the peaks rises to a height of 10,500 feet, and the highest pass stands at an elevation of 8,400 feet. South of this pass the uplands are collectively known as the "Shan-yoma," or Shan Highlands, and the whole region forms a plateau over 3,000 feet high intersected by numerous streams flowing either to the Irrawaddi or to the Salwen. South-east of Mandalay and beyond the Shan-yoma rises the isolated Nattik peak, which is visible for days together by travellers crossing the Panbung River Valley. South of this peak the Sittang-Salwen water-parting is continued by a series of ridges often over 3,000 feet high, and in the Nat-tung, or "Spirit Mountain," rising to 8,000 feet.

Although much inferior in volume to the Irrawaddi, the Salwen ranks with the great Asiatic rivers, at least for the length of its course. Under the various names of Nu-Kiang, Lu-Kiang, Lutze-Kiang, it flows from the east Tibetan plateaux parallel with the Mekong through a deep valley, most of which still remains to be explored. In the district where it forms the boundary between British Burma and Siam it flows in a deep rapid stream between wooded hills, which gradually converge southwards. Near the confluence of the Thung-yang the channel is scarcely 100 feet wide, and a little farther down its lower course is obstructed by rocky ledges, blocking the navigation even for small craft for the greater part of the year. At its mouth the approaches to Amherst and Maulmein are also impeded by dangerous sandbanks, which have been named the Godwin Sands. But the bore which is so formidable in the Sittang is not much felt in the Lower Salwen, which during the floods rises some 30 or 35 feet in the region of the rapids and sends down from 600,000 to 700,000 cubic feet per second.

The Shan Highlands, forming a continuation of the Yunnan plateau, abound like it in rich deposits of iron, lead, copper, tin, and silver. The Chwili, rising in Yunnan north-east of Bhamo, washes down auriferous sands; and sapphires, rubies, and other precious stones are found in the hills north-east of Mandalay. Burma is also one of the few countries containing jade, which occurs chiefly in the Mogung district north of Bhamo. The Burmese forests and jungles present the same

vegetation as those of British India, and the native flora has also been supplemented by useful plants from the tropics and even from Europe. Burma is one of the great producers of rice, vast quantities of which are annually exported. Bananas, mangoes, oranges, and other tropical fruits also abound, and although the sugar-cane is little cultivated, a sufficient supply of sugar is yielded by the dani,-a species of palm, the plantations of which cover a space of 30,000 acres in British Burma alone. Excellent tobacco is grown in the Maulmein district; but the tea, coffee, and cinchona plants, introduced of late years, have had but partial success. The virgin forests contain enormous quantities of good timber, cabinet and dye woods. According to Helfer, in Tenasserim alone there are at least 640,000,000 of trees, representing 377 species, of which 25 might be used for ship-building. Teak flourishes chiefly in the Pegu-yoma highlands; but some of the forests have already been consumed, and replanting in British Burma proceeds at the slow rate of about 600 acres yearly.

Fig. 206.—Teak Forests of East Pegu.

Scale 1 : 3,000,000.

Teak Forests.

60 Miles.

Elephants are more numerous in Burma than in any other part of the East Indies. But they are very shy, seldom leaving their native forests, or venturing on the cultivated lands. All belong by law to the King, and the Burmese, like the Siamese, show great skill in taming them. The rhinoceros, of which there are three species, is also tamed and used for bearing heavy burdens. The hardy breed of Burmese ponies is highly esteemed and purchased by the English for all their Eastern possessions. In Burma the rats continue to be a periodical plague, descending in countless armies from the Shan and Karen Hills, consuming the crops and driving the natives from their villages.

Inhabitants.—The Burmese.

All the natives of Burma, whether wild or civilised, belong apparently to the same ethnical stock. In the north-west the semi-civilised Khamti of the Patkoi uplands are a vigorous, well-made race, with the flat features of the Chinese, but less regular

and of darker complexion. Many have become almost completely assimilated either to the Assamese on the Brahmaputra slope of the water-parting, or to the Burmese on the Irrawaddi side. Some have learnt to read the sacred Buddhist writings, and all are of a peaceful disposition, preferring agriculture and trade to hunting or predatory excursions.

The numerous gaüms or "clans," collectively known in Assam as Singpo (Chingpo)—that is, "Men"—and in Burma and Yunnan as Kakhyens (Kakyen, Khyeng, Kachin, Kaku), form the most important ethnical group in North Burma. Near the Assam frontier they have been partly civilised and assimilated to the Khamti, but towards China they are still in a wild state. Nearly all are tattooed, and the women especially are often covered with elegant designs, serving at once the purpose of ornament and of a magic charm against sickness and witchcraft. The rich wear little silver ingots in the lobe of the ear, and garments woven by the women and dyed with indigo. The Kakhyens are skilful metal-workers, and manufacture arms for all the surrounding peoples. But they cultivate little except opium and corn, and the only domestic animal is the pig.

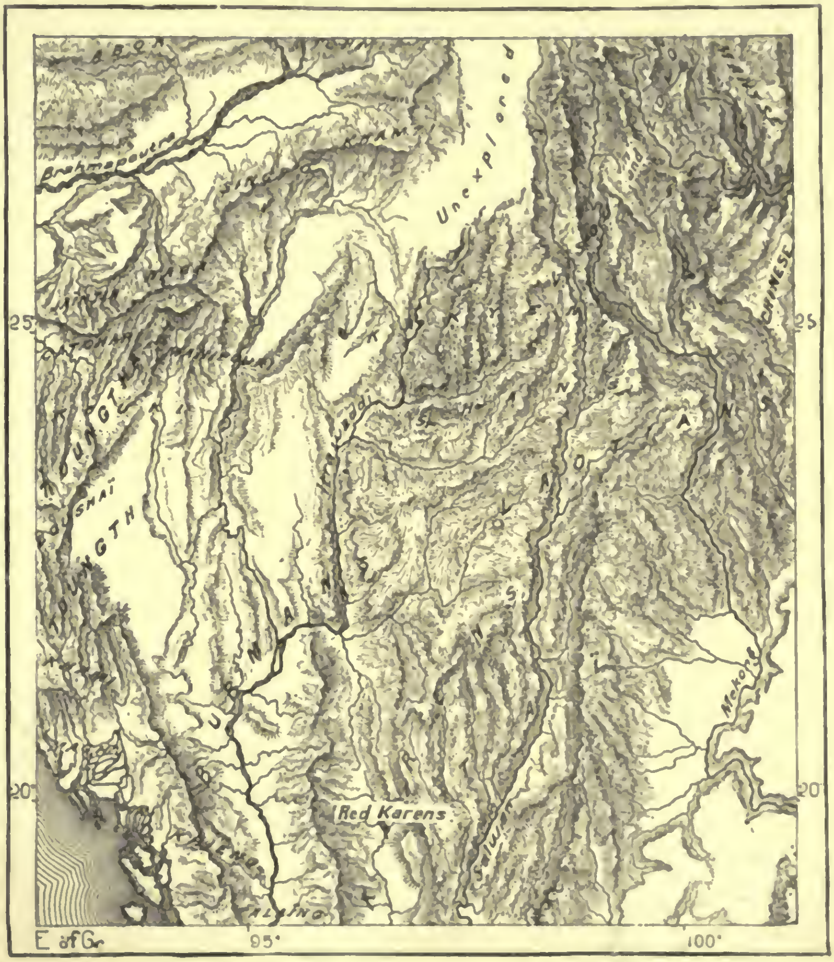
The term Karen (Karrian), probably the same originally as Khyeng, is said to mean "Aborigines," although derived by the Burmese from a Pali word meaning "Foul Eaters." But however this be, the Karens are inferior to their civilised neighbours only in social culture. Their natural intelligence, courage, honesty, and love of work render them one of the most promising elements in the future development of Farther India. Owing to recent migrations they number at present 500,000 in the British possessions, and probably 1,000,000 altogether, in a territory stretching for over 780 miles from the Mandalay Hills to those of South Tenasserim. But they are mostly divided into a multiplicity of tribes, and are found in compact groups only on the uplands about Tongu, in the Salwen valley, and Irrawaddi delta. They form three main divisions, known from the colour of their dress as "White," "Black," and "Red" Karens. The Ni, or Red, who roam the forests of British Burma, are the best known, and generally taken as typical of all the rest. All practise nearly the same usages, profess the same cult (a mixture of Buddhism and demon-worship), and speak dialects of a common Indo-Chinese language. Their national traditions connect them with the Chinese, while some ethnologists suppose they are Mongolians who migrated at a remote epoch from the Gobi or Takla Makan desert. But they more resemble in physical appearance the other inhabitants of the Burmese highlands, and some of the women have a great reputation for beauty. Amongst the Karens, European missionaries have had considerable success, and in British Burma alone there were in 1880 as many as 72,000 Karen Protestants and 12,220 Catholics, or over 84,000 altogether in a total Christian population of about 97,000.

In Burma the widespread Shan race, akin to the Thai or Siamese, are represented by a few hundred thousand souls, chiefly centred in the highlands between Bhamo and Yunnan. To the same stock apparently belong the Tungthas of the Sittang valley, while the Nagas, Kukis, and other Assamese hill tribes stretch also across the water-parting into Burma proper and the British province of Manipur.

The Mons or Talaings of Pegu, although now largely assimilated to the Burmese, are regarded as a distinct race, whose primitive speech has been compared by some with the Kolarian of Chota-Nagpore, by others with the Cambojan and Annamese of Cochin-China. Being mostly agriculturists, the Talaings, former masters of the Lower Irrawaddi and Sittang basins, have been gradually brought under the influence of Burmese culture.

The Burmese themselves, whose national name is Myama—that is, Mramma, or Brahma, according to some etymologists—claim descent from the supreme deity of

Fig. 207.—Population of Burma.
Scale 1 : 9,000,000.



240 Miles.

the Aryan Hindus. Regarding themselves as sprung from immigrants from Ayodhya, on the banks of the Ganges, they trace the national dynasty to the rajas of the Solar and Lunar race, whose insignia are still worn by their kings. The Sanskrit names of such places as Ratnapura, Amarapura, Manjalapura, Singapura certainly suggest Brahmanical influences, while the tradition is to some

extent justified by the Hindu settlements on the banks of the Irrawaddi. But these early colonists must have gradually become absorbed in the aboriginal Burmese element, and the regular Hindu type is now seldom seen in Burma, where the bulk of the people are distinguished by flat features, small oblique eyes, broad nose, but a more open and livelier expression than that of the Chinese. The original Burmese language, isolating and toned like all others of the Indo-Chinese family, has also been largely affected by Hindu elements, although the borrowed words are so disguised in pronunciation that they can no longer be recognised. From the same Sanskrit source comes the Burmese alphabet, while the religious language is still the Pali—that is, the mother-tongue of Shakya Muni.

Although of small size, the Burmese are generally robust, healthy, and very active. Large families are common, disease is rare, and food abundant. Hence the sparse population must be attributed to recent disastrous wars, present misgovernment, and a constant stream of migration into British Burma. An average degree of comfort prevails in peaceful times; mendicants are met only in the neighbourhood of the pagodas; the people are usually well dressed and of frugal habits but omnivorous tastes, rejecting neither lizards, snakes, nor iguanas, notwithstanding their Buddhist precepts. Nearly all the men still practise tattooing, decorating their persons with symbolic images, animals, sacred words, red or blue lines crossing each other in a certain magic order for the purpose of protecting the body from ailments and rendering it invulnerable. Till recently little disks of gold or silver coins were also introduced under the skin in order to preserve the bearer from misfortune. The "thunderbolts"—that is, the flint implements of the Stone Age turned up by the plough—are also supposed to possess great virtue.

In Burma the women take an active part in all family matters, and no important decisions are taken without their advice. Divorce, although easily arranged, is extremely rare, especially after the birth of children. It is generally effected in a friendly way without the intervention of the law, which interferes very little in domestic or social affairs. The dead are buried or "cremated," according to the pleasure of the deceased, but in many respects the customs of the royal family differ from those of the subjects. Thus the eldest daughter of the King is condemned to celibacy, while the princes marry their half-sisters. In the large cities, exposed to the oppression of despotic rulers, the people are generally false and cringing; but those placed beyond the reach of greedy tax-gatherers or of plundering troops on the march are bright, cheerful, intelligent, hospitable, fond of music and pleasure-seeking. The inhabitants of a burnt-out quarter have been seen to erect a theatre on the ruins, in order to indemnify themselves by a little amusement for the loss of their property. They are courteous to strangers, and as in Japan, politeness may be regarded as a national virtue. Easily forgiving, they render too ready obedience to their oppressors, satisfying themselves with imploring Buddha to protect them from the five foes: fire, water, brigands, the evil-minded, and governors. They recognise no castes or class distinctions, except as regards the temple slaves, body-burners, lepers, gaolers and the executioners, who are held to be guilty of some crime in a former existence, and are consequently barred from all society.

BURMESE ARTISANS.

About half of the Burmese people, and that the most enlightened and wealthiest, is concentrated in British Burma. Yet all alike still regard the national sovereign as at least a sacred person, representing Gautama. In spite of the political frontier indicated by the parallel of 19° 30′ N. they thus preserve a perfect consciousness of their nationality, divided for a time, but destined one day to be again united. Hence to escape the caprice and oppression of the native ruler, they emigrate not to Siam or Malaysia, but to their kinsmen in British Burma, whither they are moreover attracted by the blessings of orderly government and absolute security for life and property. Separated from Bengal and Assam by trackless mountains, entirely cut off from the sea, and divided even from Siam and China by

Fig. 208.—Burmese Waggon.

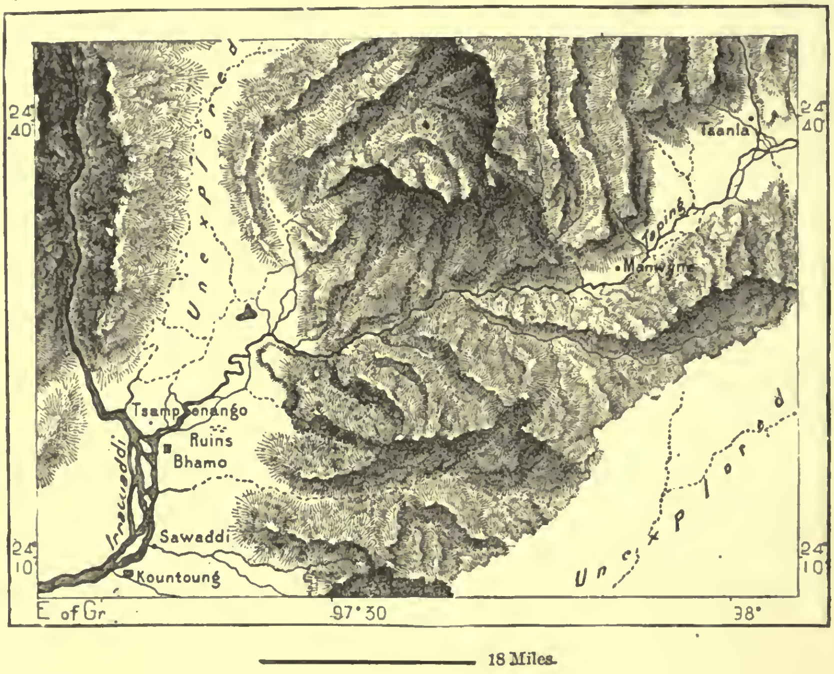
uplands often peopled by savage or hostile tribes, Burma itself lies completely at the mercy of the English. Such a helpless situation can scarcely last much longer; the necessity of opening direct trade routes between India and China across Upper Burma is becoming yearly more urgent, and the conflict thus created by economic interests must sooner or later bring about the dissolution of the effete "Kingdom of Ava." The great artery of the country is already open to the British gunboats and steamers, which might transport 12,000 or 14,000 men in five days from Rangun to Mandalay.

In the British territory agriculture has been rapidly developed under a system of small holdings of eight or ten acres liable only to a moderate land-tax, which is payable directly to the Government without the interposition of zamindars or other middlemen. Wages also average about a shilling a day, or three times more than

in British India, so that although few are wealthy, nearly all are comfortable. The specie, which yearly flows into the province to the amount of nearly £1,250,000, is employed chiefly in the manufacture of ornaments for the Burmese and Karen women. The local traffic has acquired vast proportions. In every village the dealers expose their wares in the open air; the roads are blocked with waggons and crowded with itinerant vendors; about 30 steamers and over 65,000 craft of all sizes from 150 tons downwards already navigate the Irrawaddi and its side branches; the foreign exchanges are yearly increasing, and in 1881 reached a total of £22,200,000, that is, relatively about the same as the present foreign trade of France. About four-fifths of this traffic is carried on by sea chiefly with England. But the movements with Burma and Siam are also increasing, and the trade with

Fig. 209.—Bhamo.

Scale 1 : 950,000.



the latter country will soon acquire a fresh impulse from the routes now being constructed across the frontier hills down to the Menam basin.

Industry has made no less strides than agriculture and commerce. At all times the Burmese were noted for their skill in wood-carving, weaving, bronze-casting, and boat-building. But since the vast development of the rice trade, the largest number of hands find employment in the mills, where this grain is prepared for the foreign market.

Topography.

In Upper Burma the most important place is *Bhamo* (*Bamó*), which lies on the east bank of the Irrawaddi just below the Taping confluence. Bhamo is the most

advanced military station towards China, and also the largest entrepôt in the kingdom. The river is quite navigable to this point, 720 miles from the sea, and since 1868 steamers drawing 3½ feet ascend to the Taping confluence. The Taping, which is itself accessible to small craft for about 24 miles, flows from a valley leading to the first terraces of the Yunnan plateaux. Here begins the transverse route, which presents the easiest passage between the Irrawaddi and Yangtze-Kiang basins, while the Taping junction is destined one day to be connected by rail with

Fig. 210.—Trade Routes of Burma.

Scale 1 : 18,300,000.

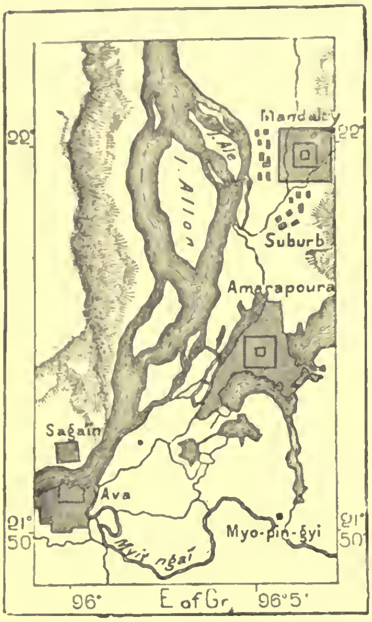
600 Miles.

Calcutta through the Barak Valley and Manipur. East of Bhamo lie the ruins of two cities, one of which is known as *Old Bhamo*, and farther north other ruins on the right bank of the Taping mark the site of *Tsapenango* (*Champanagar*), formerly capital of a Shan state, destroyed by the Singpo.

Hundreds of essays have been written on the future direct highway between India and China across the eastern continuation of the Himalayas. Yet this highway may be said to exist already. It is the "gold and silver route," through which the Chinese armies descended to the plains in 1769, and which has always

been followed by the envoys of the two States. A large portion of the goods forwarded from Rangun to Upper Burma reaches China by the same way, which was traversed in 1881 by a caravan of over 1,500 pack animals.

Fig. 211.—Ava, Amarapura, Mandalay.
Scale 1 : 360,000.



6 Miles.

Kuntung, or *Kyuntung*, lying farther down, at the entrance of a gorge on the same side of the Irrawaddi, was at one time the commercial rival of Bhamo. But below the gorge there is no other place of any importance until we reach the present capital of the kingdom. A fishing hamlet on the left bank still marks the site of the ancient capital, *Tagung*, which was succeeded a little farther south by *Pagan*, now called "Old Pagan," since another town of the same name has been built 210 miles farther down the Irrawaddi. Another village, also on the left bank, bears the name of Tsampenango, like the precursor of Bhamo on the Taping, and like it was also an old Shan capital.

The great bend of the Irrawaddi between Bhamo and the delta encloses the pre-eminently historic land of modern Burma. Here have been successively built the four capitals of *Sagain*, *Ava*, *Amarapura*, and *Mandalay*. Ava, the oldest of these cities, occupies a picturesque position on the river where it suddenly turns westwards, and where it is joined by the Myih-ghi over against Sagain. The rectangular enclosure, about 6 miles in extent, is in a tolerably good state of preservation; but the interior has been converted into an extensive park, whose avenues follow the line of the old streets. Founded in 1364, Ava remained the capital for four centuries, till 1783, when it was abandoned, but again selected as the royal residence from 1822 to 1837. From this place Burma is commonly known as the Kingdom of Ava among the neighbouring States.

Amarapura, or the "City of Immortality," lasted altogether not more than seventy-five years, down to 1857, when the court was removed to Mandalay. It formed a perfect square 4 miles north-east of Ava, on the left bank of the Irrawaddi, where it still serves as the port of Mandalay, the present capital, which lies 2½ miles from the same side of the river. The two places are connected by an avenue lined with houses, dockyards, and magazines. Like Amarapura, Mandalay forms a regular quadrangle, with brick ramparts pierced by gates on all four sides, and flanked by towers with gilded roofs. In the centre a second square enclosure contains the royal quarter, with the palaces of court ladies, ministers, and white elephant. The mathematical centre, occupied by the royal throne, is surmounted by a seven-spiral tower symbolising Mount Meru, central pyramid of the globe. Facing all the houses stands the "King's palisade," where his subjects take refuge

when the police announce the approach of the "golden feet." Built on a uniform plan and of flimsy materials, Mandalay looks like a show-place run up for a day, and destined like its neighbours to disappear at the caprice of royalty. The straggling suburbs, which are separated from the outer enclosure by a navigable moat, and protected by an embankment from the inundations of the Irrawaddi, stretch south-westwards to the vicinity of Amarapura. The walls of Mandalay rest on over fifty human bodies; for in Burma, as formerly in Palestine, the foundation

Fig. 212.—General View of Mandalay, taken from Mandalay Hill.

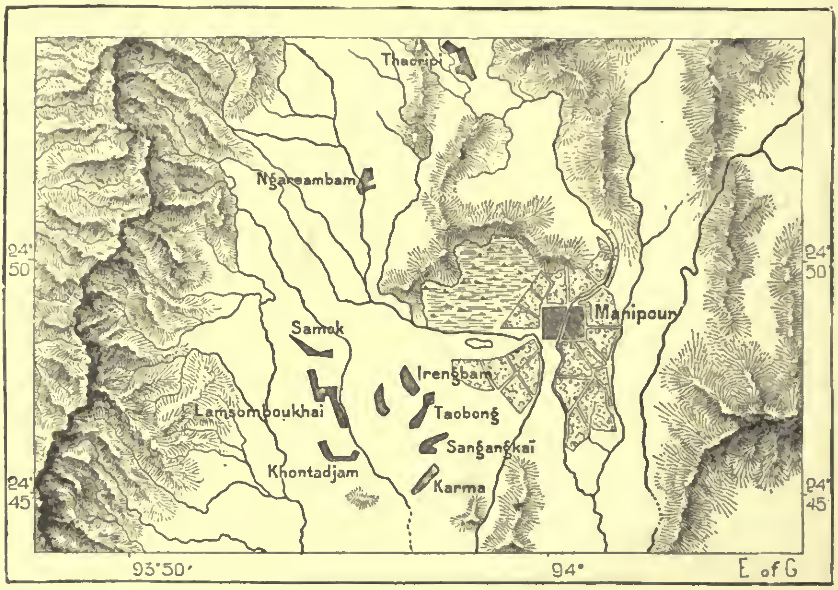
of every building must be a "live stone." An accident to a reservoir of sacred oil in 1880 called for other human sacrifices—100 men, 100 women, 100 boys, 100 girls, 100 soldiers, and 100 strangers. But when the victims began to be seized the whole population fled *en masse*, so that the sanguinary rites had to be countermanded.

Mandalay Hill is crowned by a shrine, with a statue pointing to the spot where the king received orders from above to build his palace. Another statue looking eastwards is supposed to indicate the direction which his Majesty must take sooner

or later to escape from the English. South-west of the hill a vast enclosure, with a lofty pagoda in the centre, is dotted over with some seven hundred pretty little buildings, each of which contains a marble slab inscribed with a passage from the *Pittagat*, or Buddhist scriptures. Of the other religious edifices, by far the largest is the unfinished pagoda of Mengun, a prodigious sandstone mass on the right bank of the Irrawaddi a few miles above Mandalay. It was to have been carried to a height of 500 feet, but was rent asunder by an earthquake in 1859. For this building was intended the famous bell, weighing 100 tons, which still lies in the neighbourhood.

At present the most commercial and populous place in Burma proper is *Myi Kyan*, which lies on the left bank of the Irrawaddi, in an extremely fertile rice-growing district over against the confluence of the Kyen-dwen. This great affluent

Fig. 213.—Manipur Basin.
Scale 1 : 300,000.



6 Miles.

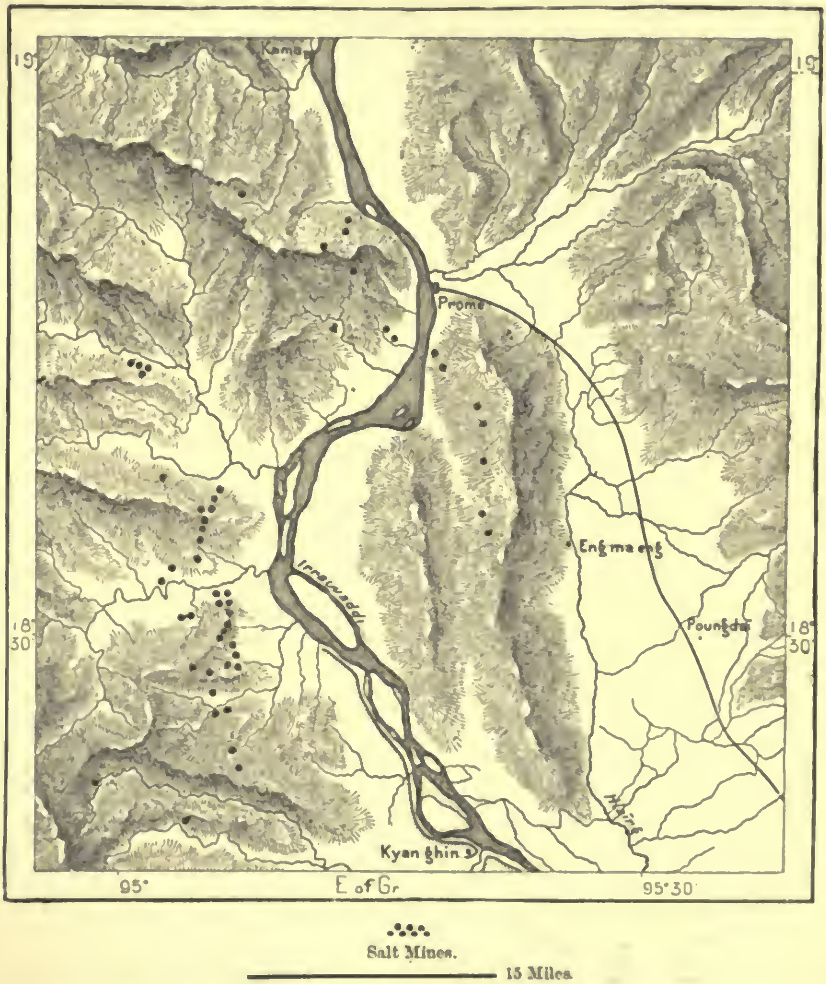
here forms with the main stream a vast labyrinth of island-studded channels, among which it is often difficult to find the main artery. But the Kyen-dwen is not navigable for boats beyond *Kendat*, 90 miles above its mouth. One of its chief head-streams waters the rich plain of *Manipur*, capital of the State of like name, now annexed to British India. On a headland a few miles below Myi Kyan stands the famous city of *Pagan*, which, before the desertion of *Old Pagan*, was a royal residence even before the foundation of Ava. Although scarcely mentioned by the early travellers, the ruins of this capital extend about 8 miles along the river, and, according to Colonel Yule, they include nearly 1,000 pagodas in a good state of preservation. "Innumerable as the temples of Pagan," is a local proverb. In 1284 a Burmese king, besieged by the Chinese, is said to have demolished 6,000 of these shrines in order to strengthen the fortifications. Amongst the remains

Yule observed a recumbent statue over 160 feet long. A few of the monasteries are still occupied by recluses, but all the houses and royal palaces have disappeared. Pagan marks the site of a decisive victory gained by the English over the Burmese in 1826.

South of Pagan follow *Magwe* and *Yenan-gyong*, noted for its petroleum wells, both on the left, and still farther down *Menhla*, on the right bank, near the British frontier. Across the border, the most advanced English station is *Thayet-*

Fig. 214.—Prome and its Salt Mines.

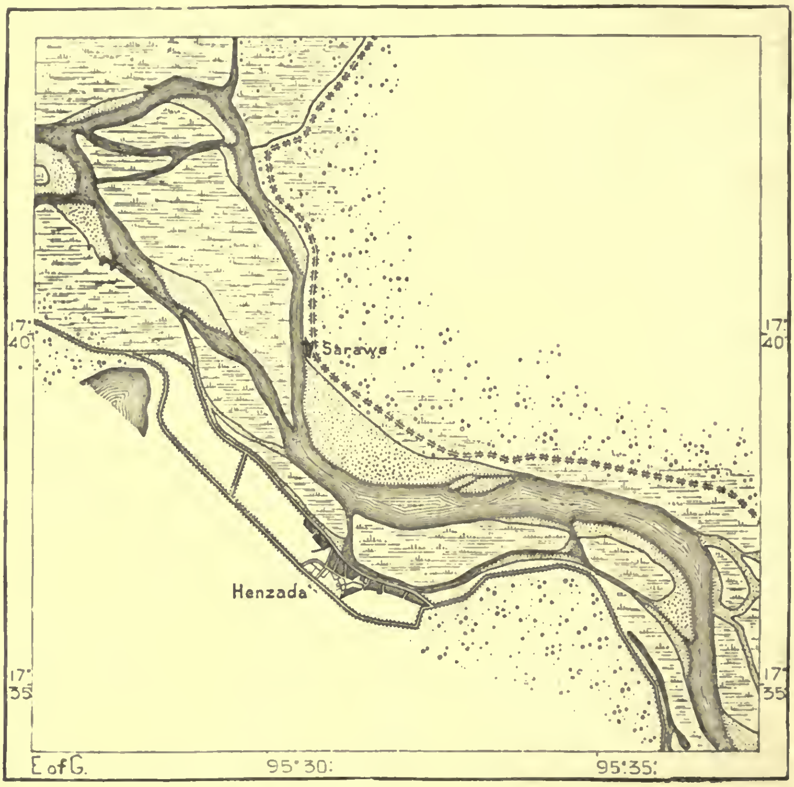
Scale 1 : 750,000.



myo. But the true capital of the region north of the Irrawaddi delta is *Prome*, on the left bank, present inland terminus of the Rangun railway, which will soon be continued to the health-resort of *Allan-myo*, facing *Thayet-myo.* The favourable position of Prome, which is said to be over 2,300 years old, enables it soon to recover from every fresh disaster. At one time it is said to have had a circuit of 36 miles, with ramparts pierced by thirty-five gates. It lies in a rich district yielding rice, tobacco, and all kinds of vegetables in great abundance. Like its neighbour

Shuedung, it contains some magnificent pagodas frequented by tens of thousands of pilgrims. But the numerous saline springs of the district are now almost entirely abandoned. South of Prome, and just below the head of the delta, stands *Henzada*, on the main branch of the Irrawaddi, which here frequently shifts its bed. Henzada enjoys a little local trade, but it is chiefly important as the centre of the hydraulic works undertaken to regulate the course of the stream in the delta. Lower down are situated all the great seaports, one of the oldest of which is *Bassein*, which by some writers has been identified with the *Besynga* of Ptolemy. It has the advantage

Fig. 215.—Dykes of the Irrawaddi at Henzada.
Scale 1 : 200,000.



Dykes constructed. Dykes projected.
3 Miles.

of being the nearest port reached by vessels from India and Europe, but the navigation of the Nawun branch of the delta on which it stands presents serious difficulties. Its merchants, who are engaged almost exclusively in the rice trade, withdraw during the hot season to the watering-place of *Dalhousie*, near the mouth of the river, and not far from Cape Negrais.

Rangun, the port of the eastern branch of the Irrawaddi, has been chosen as the capital of British Burma, and even before the annexation it had been the residence of a Burmese viceroy. A pagoda, containing some relics of Buddha, had

for centuries imparted a special sanctity to the site of the present city; but the village of *Dagun*, so named from its pagoda, did not receive the title of Rangun, or rather Rankun, that is, the "End of the War," till 1763, after the reduction of the Peguans by the victorious Alungbhurā (Alompra). This seaport, which has rapidly increased in trade and population under the British rule, occupies an admirable position on the last spurs of the Pegu-yoma, at the confluence of three rivers and of

Fig. 216.—Rangun.
Scale 1 : 550,000.

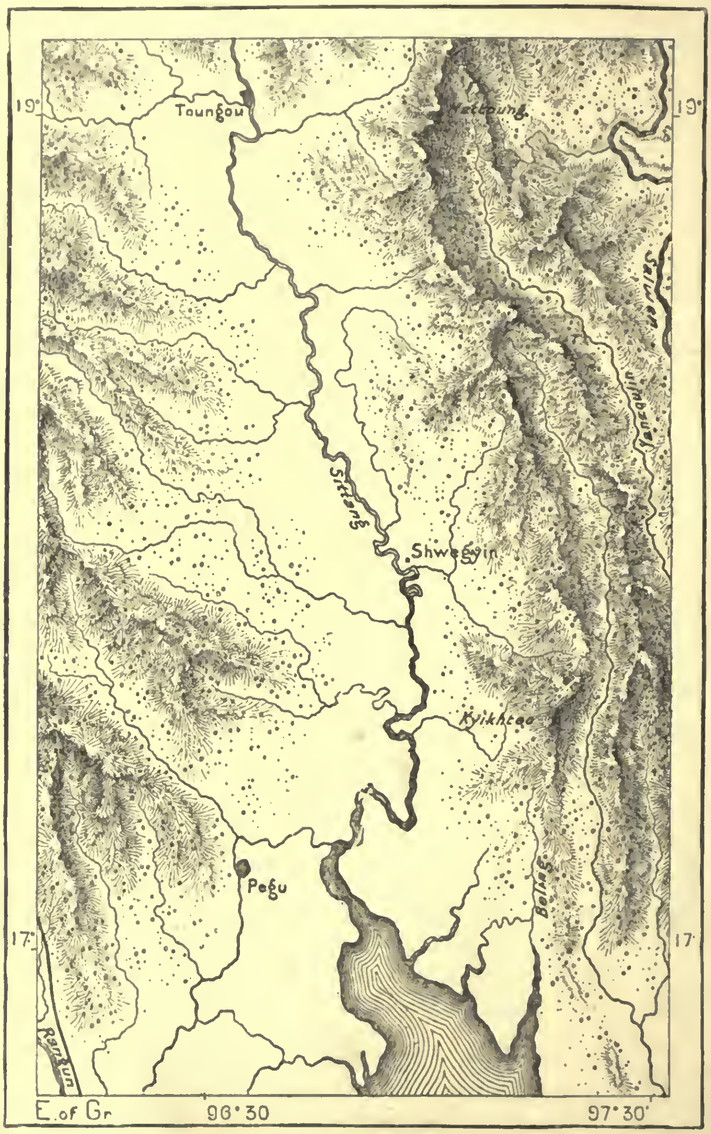
numerous navigable canals communicating with the Irrawaddi and Sittang deltas. The estuary is accessible to large vessels, and besides the Prome line it will soon be connected by rail with *Tongu*, in the Sittang basin. Next to Calcutta, Rangun is the busiest port on the Bay of Bengal. It exports teak and other timbers, gums, spices, and especially rice, and is the chief mart for English wares intended for Burma and Yunnan. It is also an important industrial centre, and the literary

capital of British Burma. Amongst its learned societies is one founded for the purpose of printing the classic works of Burmese literature.

The Shué-Dagun pagoda, which is enclosed within the British military cantonments, is an imposing pyramidal structure, whose gilded and jewelled spire rises to

Fig. 217.—Lower Sittang Valley.

Scale 1 : 2,000,000.



30 Miles.

a height of 390 feet above the pavement. During the annual fea in the month of March, it is visited by numerous pilgrims from Burma, Siam, Camboja, and even Corea. Some twelve miles east of Rangun stands the ruined city of *Syriam*, or *Thanlyeng*, on the Pegu River, of which nothing now remains except the ruins of the early Portuguese, Dutch, and English factories.

The term *Pegu*, still often applied to the portion of British Burma lying between Cape Negrais and the Salwen estuary, attests the former importance of the capital of this region; but being inaccessible to large vessels, most of its trade has of late years been attracted to the more commodious port of Rangun. After many vicissitudes this ancient capital of the Talaings or Peguans was completely destroyed by Alompra, and the present town dates only from the end of the last century. It is now little more than a station on the route from Rangun to *Tongu*,

Fig. 218.—The Salwen, above Maulmein.

or *Tung-nyu*, the chief town in the Sittang basin. Tongu lies in a fertile and well-watered district partly peopled by the industrious Karens, and much frequented by Shan traders from independent Burma.

East of the Sittang follows the Salwen, which traverses some of the least known and most sparsely peopled regions of Farther India. After emerging from the Tibetan gorges it flows through the Kakyen, Shan, Lao and Karen territories, where its banks are occupied by only a few hamlets, doing a little trade with the surrounding wild tribes. The so-called "towns" of *Theini* and *Moné* lie, not on the

Salwen but farther west, in districts hitherto unvisited by European travellers. The Zanzulin, last affluent of the main stream, makes its way through a series of romantic rapids and ravines between steep hills, which are often strewn with sandstone boulders of fantastic form. The most remarkable of these rocks, remnants of disintegrated mountains, have been surmounted by little pagodas, which can only be approached by dangerous bamboo ladders. Of these aerial

Fig. 219.—Boulder surmounted by a Pagoda.

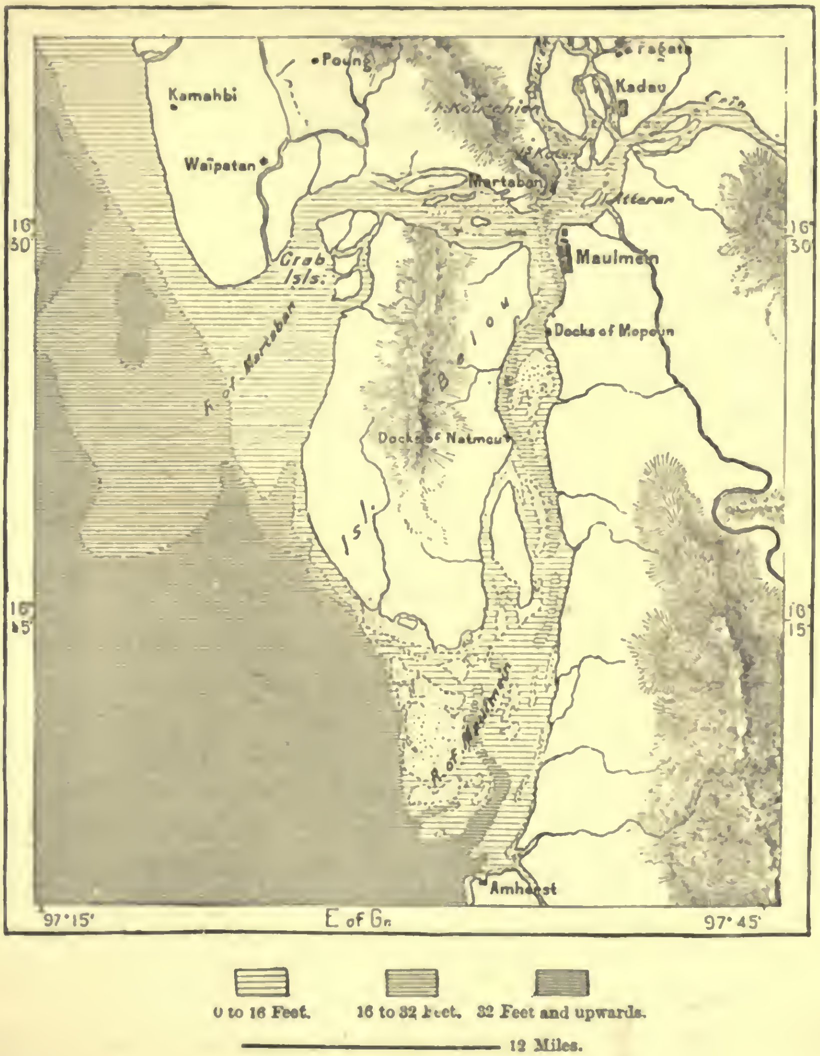
shrines the most singular are those occurring on the *Kyikhteo* Hills, 15 miles north-east of the village of like name.

The course of the Salwen has been surveyed by Sprye and other English explorers for about 360 miles from its mouth to the Shan territory. Although destitute of routes communicating with the interior, the plains of the delta are rich enough to support a considerable trade. For at least 1,300 years a capital has flourished in this region; but, like so many others in Burma, it has often been displaced. The ancient *Martaban*, or *Mut-tama*, at one time important enough to have given its name to the neighbouring gulf, is now a mere collection of huts. Facing it is the new town of *Maulmein* (*Moulmain*), capital of the district, on the

east bank of the Salwen, where the stream bifurcates round the large island of Belu or Bhilu-ghaiwon. Maulmein, which is inhabited by a motley population of Burmese, Talaings, Karens, Hindus, Malays, Chinese, Europeans, and Eurasians, is almost exclusively a commercial and industrial place. It exports teak, rice, and cotton, and its dockyards turn out vessels noted for their strength and fine lines.

Fig. 220.—Maulmein and Mouths of the Salwen.

Scale 1 : 585,000.



During the oppressive summer heats its merchants take refuge in the little watering-place of *Amherst*, which lies on the coast 30 miles farther south. In the alluvial plain stretching north-west towards the Sittang estuary stands the large town of *Tatung* (*Thatohu*), metropolis of the Thungtu aborigines. Here were erected the first Buddhist temples, which served as the models for those afterwards scattered all over Burma.

CHAPTER XXI.

MENAM BASIN.

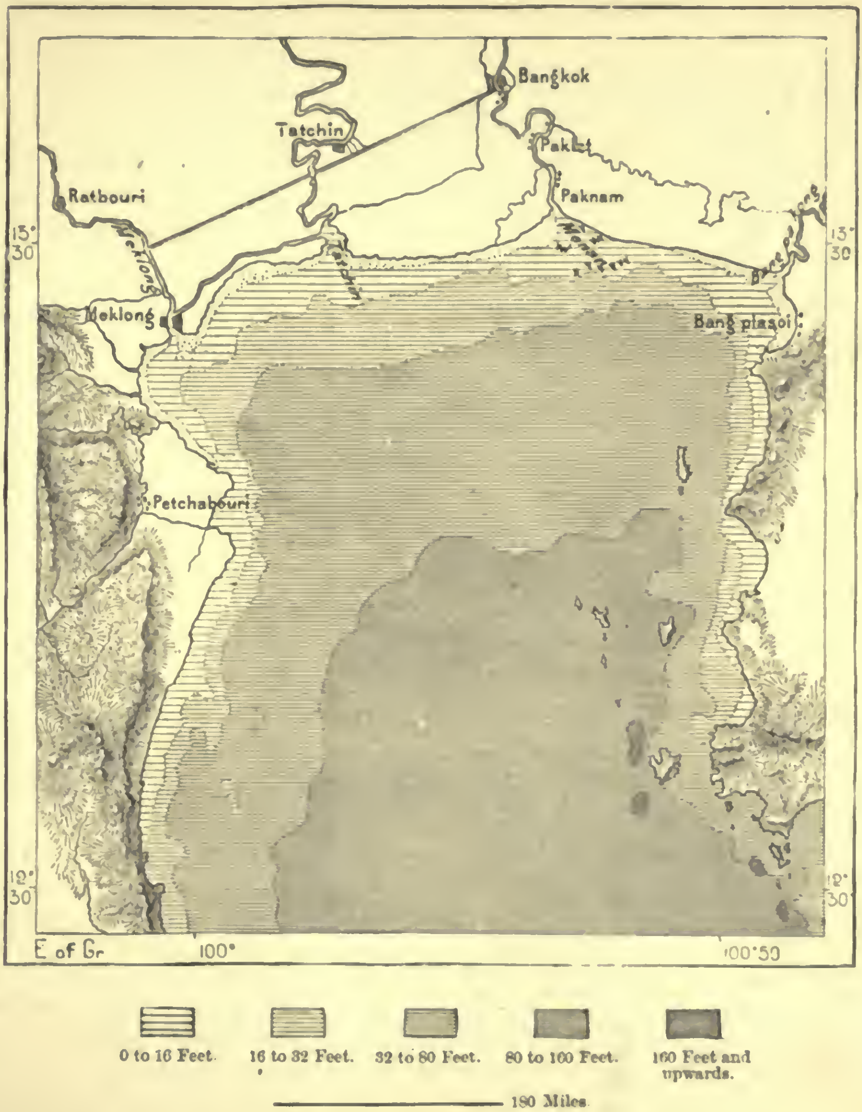
West Siam, Shan, and Lao States.

ALTHOUGH less extensive than the other great Indo-Chinese fluvial basins, that of the Menam, or "Mother of Waters," occupies a more central position, and has thus played a leading part in the historic evolution of Farther India. Uniting its waters with several other rivers in a common delta, it reaches the coast at the northern extremity of a gulf, which penetrates far inland, and which presents a seaboard of no less than 900 miles. The entrance of the Menam thus forms the central point of a vast circle, towards which converge all the sea routes on the one hand, and on the other all the highways of the river valleys. Lying midway between the Bay of Bengal and Gulf of Tongking, the Siamese seaboard forms the geographical centre of the Transgangetic Peninsula. Thus favoured by the exceptional advantages of its position, the people known to Europeans as the "Siamese," but who call themselves "Thai," that is, "Free Men," have exercised the greatest civilising influence on the aboriginal populations of the interior. Within the historic period Siam has also generally held the most extensive domain beyond the natural limits of the Menam basin. Even still, although hemmed in on one side by the British possessions, on the other by the French protectorate of Camboja, Siam comprises beyond the Menam Valley a considerable part of the Malay Peninsula, and draws tribute from numerous peoples in the Mekong and Salwen basins. But this State, with an area about half as large again as that of France, has a population of probably less than 6,000,000.

The Menam rises in the Lao territory, between the here converging valleys of the Salwen and Upper Mekong. On entering the Shan state of Kieng-mai it is already accessible to boats, and throughout the whole of Siam proper navigable by light craft, while steamers ascend its lower course with the tides. So dense is the vegetation on both sides that in many places the banks are entirely concealed by a tangled growth of palms, bamboos, creepers, and tropical foliage. Before reaching the gulf it ramifies into a number of side branches, which effect a junction with various other streams, all subject to extensive inundations during the annual risings

from June to November. Rice grows luxuriantly in the surrounding plains, which at this time are navigated by boats in all directions. Herds of elephants frequent the flooded tracts, some of which are never entirely drained. The sluggish Khorayok especially, which near its mouth is connected by an artificial canal with

Fig. 221.—Gulf of Siam.
Scale 1 : 10,000,000.

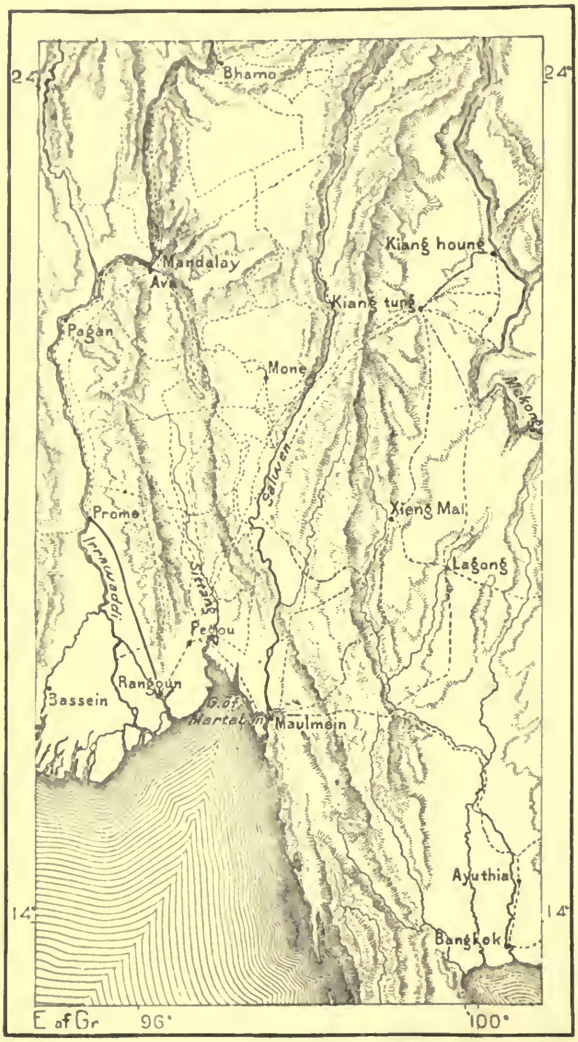


the Menam, is fringed by several permanent swamps of great extent, but mostly concealed by tall herbage. At the head of the gulf a crescent of submerged sand-banks, stretching some 60 miles east and west and accessible to vessels of 500 tons only at high water, separates the sea from the plains of Bangkok, which at one time formed a northern continuation of the gulf. A well sunk to a depth of

20 feet in Bangkok itself traverses successive layers of marine deposits abounding in sea shells.

The forest-clad hills forming the water-parting between the Menam and Lower Mekong basins have been crossed only at a few points by Schomburgk, MacLeod, Sprye, O'Reilly, Bastian, Mouhot, and a few other travellers. The routes between Bangkok and Maulmein *viâ* Rehein, between Maulmein and Kieng-mai, and between Tongu, Moné and Kiang-tung, have also been explored. But the regions especially about the sources of the Menam are still scarcely known. Mouhot, who traversed the Lao country between Ayuthia on the Menamand Luang-Prabang on the Mekong, describes it as mountainous, and speaks of the majestic aspect of the range skirting the Menam Valley on the east and stretching away to the Cambojan frontier. From the isolated bluff of Patavi, standing about 36 miles to the north-east of Ayuthia, a magnificent prospect is afforded of these highlands, which form a vast amphitheatre of hills, bounding the horizon on the north and east.

Fig. 222.—Routes of Explorers in Burma and Siam.
Scale 1 : 10,000,000.



180 Miles.

Over against Patavi stands P'rabat, the sacred mountain of the Siamese, where they worship the imprint left by the foot of Samona-Kadom, the "Holy Shepherd." The rocks piled up in disorder round about P'rabat bear other traces resembling the steps of elephants, tigers, and other animals, all sharply outlined as if made in the soft clay. According to the local tradition Buddha crossed the mountain, followed by an endless cortège of forest beasts, whence the marks, which have not yet been studied by geologists. Farther east the surface is covered for a space of about 10 miles with blocks of iron ores resembling meteoric stones. Stems of petrified trees

SIAMESE YOUTHS.

are also met near Patavi, which is streaked by the mineral streams with many-coloured lines, supposed to represent "the shadows and rays of Buddha." Beyond the Korat Hills farther north, the country abounds in copper, tin, antimony, and magnetic iron ores, and the streams are here and there washed for gold. Immediately east of Shantabun is the Koh-Sabap, or "Mountain of precious Stones," from which the torrents send down rubies, sapphires, and other valuable crystals.

The climate of Siam differs little from that of the surrounding regions lying under the same latitude. Throughout its entire length the Muang-Thai, which is said to stretch 1,200 miles north and south, is alternately exposed to the moist south-west and dry north-east trade-winds. The former, which generally begins in May, is gradually deflected westwards, and is succeeded, towards the end of September, by the north and north-east currents, which in their turn are slowly deflected to the south-east and east. In Bangkok the mean temperature oscillates between 81° and 86° F.; but the heat is oppressive only in March and April, after the north-east winds have ceased and before the rainy monsoon sets in. Although probably lighter than in Burma, the average rainfall of the Menam basin is estimated at 60 inches, or about double that of France. Here also the malaria is less fatal than in Bengal, Burma, or Java.

In its fauna and flora Siam occupies a somewhat intermediate position between Burma and China. Elephants abound in the Lao forests and in parts of the Menam basin, where the so-called "white" specimens are held in special veneration. White monkeys and ravens are also held in great honour, the latter especially being regarded as supernatural beings. The tuk-hai, a species of iguana covered with red specks, is regarded as a household god, because it preys on rats and other vermin, and ant-hills are considered sacred objects because they resemble pagodas in shape. The insect world is represented in the Muang-Thai by countless species, while the rivers and gulf teem with fish. *Ngapi*, a universal relish at every table, is prepared, as in Burma, from fermented fish and shrimps.

The inhabitants of Siam, whether Shans, Laos, or Siamese proper, belong all alike to the same Thai stock, which is also represented by numerous tribes in Assam, Manipur, and China. The Shans are very numerous in the region of the Upper Irrawaddi and its Chinese affluents, in the Salwen Valley, and in the portion of the Sittang basin included in British territory. But along the banks of the Irrawaddi they have mostly become nearly altogether assimilated in type and speech to the Burmese. In Yunnan, also, many now resemble the Chinese, and the old Shan empire of Pong has been broken up into several petty states governed by patriarchal *tsobuas*, or chiefs, and tributary to the neighbouring kingdoms.* The Peï, or Northern Shans, are nearly all of small stature, and darker than Europeans, with broad face, prominent cheek-bones, and black, lank hair. The expression is generally mild, thoughtful, and almost sad, although they are really good-humoured, friendly, and fond of music. The ordinary dress is of a very dark blue, dyed with wild indigo, and the women wear beautiful silver ornaments,

* Carl Bock, however, who explored North Siam in 1881-2, says that the Shan states of the Kiang-hung, and apparently also Kiang-tung, are still quite independent.—*MS. Note.*

diadems, earrings, and buttons of native workmanship. Most of them are occupied in weaving, dyeing, embroidering, straw-plaiting. The men, also, are skilled agriculturists and shrewd traders. They have a peculiar alphabet, and many of their Buddhist priests are fairly well instructed. Hence the Shans little deserve the epithet of "White Barbarians" applied to them by the Chinese.

The Lovas, better known by the name of Laos or Laotians, are related to the Shans, and occupy the north of Siam, especially between the Salwen and Mekong Rivers. Being more or less mixed with the aborigines they present a great diversity of types. They form several "kingdoms," all vassals of the King of Siam, to whom they pay a triennial tribute of gold, silver, flowers, and sundry produce. The Lao nation comprises three distinct groups: the "Whites," who do not tattoo, the "Blacks," and the "Greens," who paint their faces in these colours. Another classification is into "White" and "Black Paunches," of whom the latter are the least civilised, and dwell chiefly about the Upper Menam. Southwards the transition is very gradual from the Laos to the Siamese proper. But in the districts where they have remained pure the Laos are superior to the Southern Thai in figure, strength, and regularity of features. They are keen traders, and every village possesses a number of pack elephants, sometimes as many as fifty or even one hundred. Like the Shan, the Lao language differs little from Siamese, but has a softer pronunciation and employs different characters. The Buddhist priests are extremely numerous, forming, according to Dr. Harmand, one-eighth of the whole population in the Mekong Valley.

The Siamese, properly so called, are centred chiefly in the Lower Menam basin and along the seaboard. Although the most civilised they are not the purest of the Thai race, having become more or less intermingled with Chinese, Burmese, Malay, and other foreign settlers in Siam. This word Siam or Sayam is said by some natives to mean "Three," because the country was formerly peopled by three races now fused in one nation. Others derive it from saya, "independent," sama, "brown," or samo, "dark." But the more usual national name is Thai—that is, "Free," or "Noble." The Siamese are generally of mean height and well proportioned, with olive complexion, black eyes, somewhat broad features, but much less flat than the ordinary Mongolic type. The men carefully pluck out their scanty beard, and both sexes shave the head, leaving nothing but a round tuft on the crown. Most of the children, with their bright eyes, pleasant smile, pliant limbs and black top-knot decked with flowers or gems, are quite charming; but soon lose their beauty and dainty appearance. To the European eye the Siamese are an ugly people, and their somewhat "Simian" expression is heightened by the practice of blackening the teeth. The dress is at once simple and elegant, consisting of the languti or loin-cloth, and a strip of cloth thrown by the men across the shoulders, and by the women usually wound round the waist.

The Siamese are well named "Indo-Chinese," their manners, customs, civil and religious institutions all partaking of this twofold character. Their feasts are of Brahmanical origin, while their laws and administration are obviously borrowed from the Chinese. Their isolating speech, being mainly monosyllabic, is toned like

the other members of the Indo-Chinese group. But the alphabet is of Hindu origin, and in the elevated style free use is made of Pali terms. The people themselves are mild, patient, laborious, extremely kind and hospitable. The poor are everywhere assisted, and along the wayside travellers find vessels of fresh water

Fig. 223.—Inhabitants of Siam.

Scale 1 : 14,000,000.

300 Miles.

and little refuges, where they can cook their food and pass the night. Crimes of violence and strife are very rare, and politeness universal, but unfortunately accompanied by obsequiousness and duplicity, for which a long-established despotic government must be held responsible.

The Buddhism of Siam has preserved itself from foreign elements better than

that of most other Asiatic regions. The king has even recently undertaken the part of "Defender of the Faith," and a lengthy correspondence has been carried on between the Court of Bangkok, the other eastern governments, and the expounders of the "Great Doctrine," who are pursuing their inquiries even in the European libraries. The law requiring all youths to pass their twentieth year in a monastery is obeyed even by the kings, who on re-entering the world have to be crowned again. The nation spends yearly over £4,000,000 on the maintenance of the priests and monks, and the *vat-luang*, or "royal cloisters," form a vast assemblage of pyramidal pagodas, convents, courts, shrines, gardens, tanks, constituting a sacred domain, where criminals find refuge, as in the sanctuaries of mediæval Europe. This and many similar foundations supported by the state, the nobles, or the people, contain vast treasure representing the greater part of the national savings. Golden idols glittering with precious stones are by no means rare in the temples, which, however, freely admit sculptures of a more profane character. In one place Bastian saw a statue of Napoleon by the side of a Buddha, and amongst the European prints decorating the walls some are met representing military reviews and battle-fields. Religion itself consists almost entirely of empty show and an extravagant respect for animal and even vegetable life. Religious indifference is widespread, the temples are little frequented, and the priests are held in slight esteem. They are accused of transgressing most of their numerous precepts, and were they not regarded as magicians, their constant appeals to the charity of the faithful would meet with little response.

About one-fourth of the inhabitants of Siam had from various causes fallen into a state of bondage about the middle of the present century. But since the abolition of slavery in 1872, the population has increased, especially by Chinese immigration. Certain professions are entirely in the hands of settlers, especially from Fokien and Kwang-tung, and the Chinese element is variously estimated at from 500,000 to 1,500,000. The Chinese settlers are at once the most active, enterprising, and troublesome section of the community, and their political aspirations have in many places had to be suppressed by armed force. From them the natives have acquired a taste for opium, which has already become very general. There are also numerous Talong settlers, while the wild tribes beyond the Mekong, collectively known as Khas, are identical with the Prom or Prong of the Cambojans, the Moi of the Cochin-Chinese, and the Myong of Tongking. This term Kha, which originally meant "slave," is not to be confounded with *Khek*, which simply means "stranger." Hence the expressions Khek-Hindu, Khek-Malayu, Khek-Java; but as these Hindus, Malays, and Javanese are nearly all Mohammedans, Islam itself is comprised under the general designation of Khek.

The "Master of the World," or "Master of Life," as the King of Siam is generally called, enjoys absolute power over the lives and property of his subjects. He owns in principle all the land, and the whole revenue derived from taxes, customs, monopolies, tribute, and all other sources is poured into the royal treasury and placed entirely at the disposal of the sovereign. He can name his successors, even setting aside his own family; but should he fail to exercise this privilege,

the crown passes to his eldest son. The ceremony of coronation is followed by numerous feasts symbolising the possession of earth, air, and water by the new sovereign. But all-powerful though he be, and surrounded, like the gods, by "an army of angels," his theoretic omnipotence is limited by the Book of Ceremonial, in which his daily acts and whole conduct are regulated.

A second king, always nearly related to the first, enjoys the title and a few attributes of royalty. But he exercises no power, and his chief function is that of father to the queen-consort. The title of king was till recently borne by a third personage; nor is this double or triple royalty an exclusively Siamese institution, for in several other Indo-Chinese states dominion over the natural elements of fire and water is also shared between two joint rulers. Palace intrigues arising out of this dual system are guarded against by a long-established tradition, and by various precautionary measures, which place the first king beyond the reach of his popular associate. In case of disobedience to the prescribed rules, princesses are sewn up in a sack and thrown into the river, while princes are beaten to death with rods of sandal-wood.

The royal council consists of the ministers of the interior, foreign affairs, war and navy, besides which there is a kind of senate comprising about twenty of the chief mandarins. Some of the royal princes are promoted to high offices in the State, but most of them lead idle and dissolute lives as pensioners of the royal household, while a few engage in trade or some profession. In general the chief offices are hereditary, but there is no aristocracy of blood, titles conferred by the king being always personal. The laws are applied with great severity, and the Chinese principle of jurisprudence, making the family or even the whole community collectively responsible for a crime or calamity, is pitilessly enforced by the mandarins.

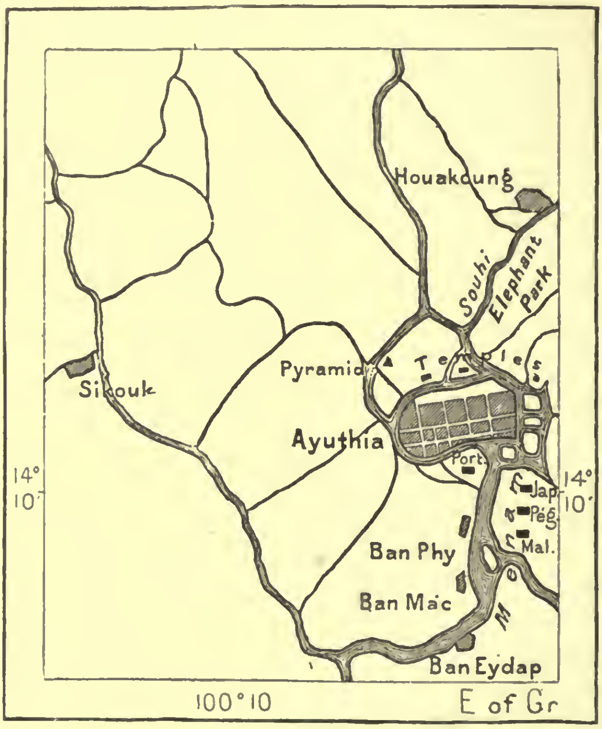
All the inhabitants being regarded as slaves of the sovereign, they are liable to be pressed into the military service, whatever be their profession. Nevertheless according to long-established usage the duty of serving falls on certain special classes, such as the immigrants from Pegu, carpenters and other skilled labourers. In recent times these artisans have been employed more in the building of royal palaces and temples than in actual warfare. A battalion of "Amazons" keeps guard in the inner apartments; but a regular body of infantry and artillery has also been organised under European officers, and the entrance of the Menam is now defended by a flotilla of gunboats. British having succeeded to Chinese influence, most of the naval and military as well as of the custom-house officers are Englishmen. The *Bangkok Recorder*, or official gazette, is also issued in English and Siamese, and princes of the royal household are sent to England for their education.

Beyond Siam proper, which comprises 41 provinces, various feudatory States have each their special government modelled on that of Bangkok. In the north the tributary kingdoms of Xieng-mai, Labong, Lakhong, P'ré, Nan, Muang-Lom, comprise the Upper Menam valleys; the large state of Luang-Prabang is traversed by the Mekong, and in Malacca the kingdoms of Ligor, Songkhla, Patani, Kalantan, and Tringanu follow in succession from north to south, while Kedah skirts the west coast of the peninsula north of the British province of Wellesley.

TOPOGRAPHY.

The city of *Xieng-mai* (*Zimmé* in Burmese) is capital of the Lao state of like name, and has a large population vaguely estimated at 300,000. It lies in an extensive fertile plain, watered by the Meping, or Upper Menam, and is enclosed by a double rampart. Its broad streets are lined by houses, each with its garden plot, and often well stocked with wares brought hither by Chinese or Bangkok traders. Its natural port, however, is Maulmein, with which it communicates by a route traversing teak forests. It also lies near the direct highway from Rangun *viâ*

Fig. 221.—AYUTHIA IN THE LAST CENTURY.
Scale 1 : 482.000.



Foreign Quarter.
Port., Portuguese. Jap., Japanese. Peg., Peguans. Mal., Malabars.
6 Miles.

Semao (*Esmok*) to Yunnan-fu, a highway frequented from time immemorial by Chinese dealers, bringing silks and metal wares in exchange for rice, cotton, ivory, lacquer, wax, and incense. The journey takes over thirty days for a distance of 360 miles, across forests and mountain ranges. In the same valley, and 18 miles south-east of Xieng-mai, lies *Labong*, also capital of a state, east of which is *Lakhon*, another capital on the Mewang. This river joins the Menam above *Rahein*, a market-town, where a large number of teak boats are yearly built. Still farther east *Muang P'ré* and *Muang Nan*, capitals of the states of P'ré and Nan, lie in fertile valleys, watered by affluents of the Menam, which converge lower down at

Pitsanulok (*Pitsiluk, Pitsalok*), formerly capital of Muang-Thai, but now much decayed.

Fig. 225.—Bangkok—Street View.

The city of *Siam*, or *Ayuthia* (*Si Ayo-Thaya*), now called *Krung-Kao*, was the

royal residence for over 400 years, from 1350 to 1767, when it was captured by a Burmese army. At that time it contained 5,000 Christians, who were led into captivity, and all the foreign settlements of Chinese, Annamese, Malays, Peguans, "Malabars," Japanese, and Portuguese had each their separate quarters grouped round the island in the Menam, on which stood the Siamese city proper. Vast spaces are still covered with the ruins of pagodas built somewhat in the style of the

Fig. 226.—Bangkok and Mouth of the Menam.

Scale 1 : 350,000.

Hindu temples. North of the city stands the "Golden Mountain," one of the oldest buildings in the country, rising 400 feet above the surrounding plain. The king possesses sumptuous palaces in the ancient residence of his dynasty, north of which stretches the Elephant Park, still used as a royal hunting-ground.

Although not yet a century old, *Bangkok*, the present capital, has already a population of over 500,000, and is now the largest city on the Asiatic seaboard, between Calcutta and Canton. The city proper, which has a circuit of nearly 9

miles, stands about 18 miles from the sea, on the left bank of the Menam, which here describes a sudden curve to the west. Extensive suburbs above and below, and on the islands, cover with the central quarter a space of altogether not less than 16 square miles. Intersected in every direction by canals, this "Venice of Siam" presents from a distance a marvellous picture, more extensive and in appearance more imposing than the Queen of the Adriatic itself. Above the houses, shipping, and dense foliage, rise the sculptured pyramids of the pagodas, covered with mosaics and glittering like gold in the bright sunshine. Both sides of the stream are hidden by floating houses and picturesque dwellings, mostly carved, embellished with paintings and gilding, and moored to the banks. Houses more in the European taste are centred in the neighbourhood of the harbour, and the royal palace itself is a fine structure quite in the Italian style. But the chief curiosities are still the pagodas profusely decorated with delicate sculptures, chased metal-work, and precious stones. In one is a gilded effigy of Buddha, filling a nave over 160 feet long, in another one of solid gold, in a third a jade statue of the same divinity.

Most of the foreign trade of Siam is centred in Bangkok, and is monopolised chiefly by the king, the royal princes and the Chinese, who form probably half the population. About two-thirds of the exports consist of rice, shipped to Hong Kong, Singapore, Batavia, and Europe. Other exports are salt fish, benzoin, teak, pepper, sesame, and cattle. Owing to the preponderance of British commercial interests, the English Consul exercises almost as much effective power as the king himself. Subject to his jurisdiction are not only the English residents, but also the natives of India, British Burma, Chinese from Hong Kong and Singapore, and the Malays of the Straits Settlements.

Below Bangkok the approaches are guarded by the batteries of *Paklat* and Paknam, where the customs are levied. The capital also communicates through navigable canals with *Tashin*, *Meklong*, and the other ports of the delta. Near the Cambojan frontier stands the flourishing seaport of *Shantabun*, which exports pepper, timber, and precious stones. On the west side of the gulf, the only noteworthy Siamese town is *Pechiburi*, which lies at the foot of the hills some distance from the coast, and which has been almost entirely laid out on plans brought from England. A neighbouring eminence is crowned by a royal palace built on the model of Windsor Castle. In this district the Peguans appear to be more numerous than in any other part of Siam.

CHAPTER XXII.

MEKONG AND SONG-KOI BASINS.

East Siam.—Tongking.—South Annam.—Camboja.—French Cochin-China.

ALTHOUGH the largest in extent, the Mekong is far from being the most populous river basin in Farther India. Much of this region still remains to be explored, and about one-half is occupied by wild tribes. The coast-lands alone have long been settled by the civilised Khmer, or Cambojan people, who received their arts, sciences, and religions from India. But to these Hindu influences have now succeeded those of the French, who have recently established themselves on the Lower Mekong. The population of French Cochin-China is, however, much inferior to that of Annam, which comprises the eastern slope of the Pacific Coast Range. Compact communities are here settled, chiefly in the basins of the Song-koi and other rivers of Tongking, which province, although scarcely forming a twentieth part of Indo-China, contains probably one-half of its inhabitants. This region, which is only partly separated by natural frontiers from China, resembles the most flourishing parts of that empire in the number of large towns and villages crowded together on its cultivated plains. Tongking has even been frequently subject to the Chinese sovereigns, and the king of Annam still sends regular tribute to the Court of Peking. On the other hand semi-independent principalities have been established in the interior, and France has begun to exercise a fictitious protectorate over Cochin-China, the strategical points of which were occupied in 1883.

North of the Gulf of Tongking, the political frontier of Farther India is indicated by Cape Paklung; while in its lower course the Ngannan-kiang serves as the official limit between China and the kingdom of Annam. But within 30 miles of the coast we enter a little-known highland region, which merges in the Kwangsi and Yunnan tablelands. In accordance with the long-established policy of China, this frontier zone has been kept as an almost desert borderland, whose few inhabitants are forbidden either to drain the marshes, clear the forests, or open roads across the hills. For a space of about 20 miles this tract is held by tribes whose independence is respected on the condition of their preventing all communication between the civilised communities on either side. Nam-kwan and Bien-cwong, the two chief

frontier passes, are also strongly fortified, although in other respects the best political relations are maintained between the two states.

The hilly region of Kwangsi is continued along the north Tongking seaboard by secondary branches, one of which rises to a height of over 4,600 feet. Here the coast is fringed by steep cliffs, or broken into rocky islets, one group of which has earned the name of the Pirate Islands. But southwards, the frontier highlands are abruptly limited by the alluvial plains of the Red River and its tributaries. West of this valley the land again rises, developing a mountain range, which branches off at a mean height of 5,000 feet in a south-easterly direction from the Yunnan plateau, and which probably forms the water-parting between the Song-koi and Mekong basins. Its advanced spurs, which have alone been explored, abound in coal, iron, tin, copper, silver, and gold. One of these offshoots, stretching south of the Song-koi delta, serves as a natural limit between the two main divisions of the Annamese empire, while others reach the coast at various points, here forming numerous inlets and even several deep harbours. Thus the zone of plains and low hills, between the main range and the sea, has an extreme width of not more than 30 miles, and at some points is contracted to 9 or 10 miles. The streams descending from the watershed flow mostly through lateral valleys at right angles with the coast, and the same direction was followed by the wall built in the sixteenth century as a barrier between the two states of Tongking, or the "Eastern Capital" (called also "Dang Ngoai, or "Outer Route"), and the southern Dang Trong, or "Inner Route." The term *Annam*, applied more specially to the coast region, is merely a form of Ngannan, the name of the frontier river, meaning the "Peace of the South."

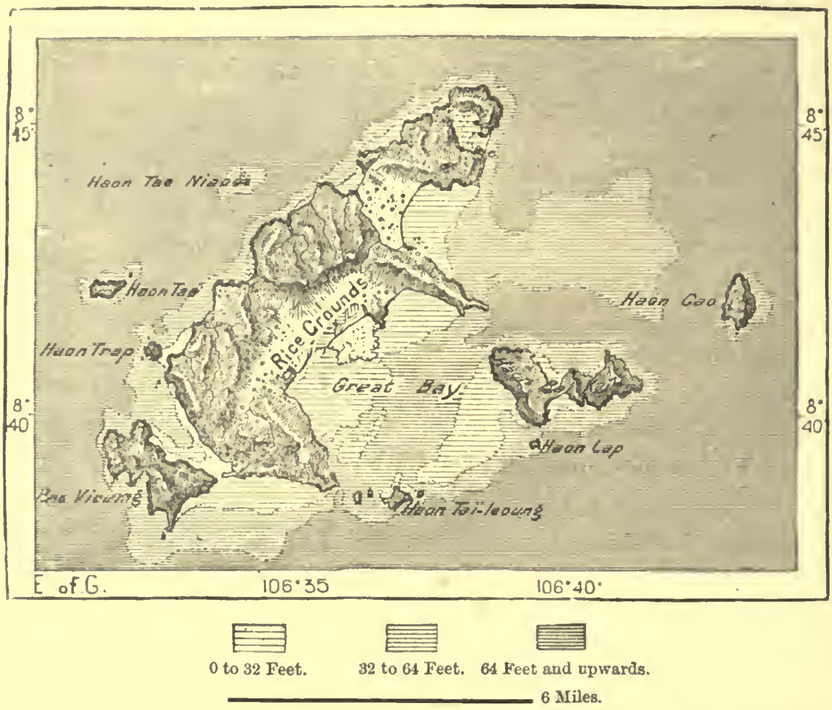
South of Hué, the best known inlet is the Kua-han, or Turane (Turon) Bay, which is encircled north and west by hills, and converted into an almost land-locked basin by a headland, connected on the south-east by a strip of sand with the mainland. It also communicates by a navigable canal with the old port of Faifo, lying farther south. The coast facing south-east is also indented by a number of similar inlets, such as Kui-ñon, Cumong, Swan-dai, Hon-khoi, Biñh-hoa, and Kam-rañ. Here are also a few rocky islets, of which the best known are Pulo Cecir de Terra close to the shore, and Pulo Cecir de Mar (Kulao Thon) farther seawards.

Beyond the main water-parting a few isolated eminences and detached ridges rise in some places to heights of 6,000 feet and upwards. Amongst them is the P'u-sung, commanding the left bank of the Mekong; and fringing the north side an extensive plateau 3,000 to 3,300 feet high, which occupies the circular space limited west by the Mekong, north by the Se-don, east and south-east by the Se-cong Rivers. This tableland of Saravan, or Boloven, is partly covered with a magnificent vegetation of conifers, oaks, chestnuts, hornbeam, bamboos, palms, and tree-ferns. The soil consists of ferruginous clay resting on sandstones, beneath which the deep erosions of the torrents have revealed beds of lava and other igneous deposits. The Bassac Hills, rising west of the Mekong to an extreme height of 3,850 feet, seem to belong to the same geological formations, south of which the Cochin-Chinese uplands acquire their greatest expansion. Here the main axis runs first in the direction of the meridian and then south-west, parallel

with the coast, terminating in steep escarpments on the frontier of French Cochin-China. Beyond this point nothing remains except isolated bluffs, such as the wooded headland of Cape St. James, connected by alluvial deposits with the mainland in comparative recent geological times. But the seaward prolongation of the Annamese mountain system is still marked along the line of its axis by the Pulo-Condor Archipelago.

West of the Mekong delta the irregular and partly volcanic heights of South Camboja are connected by the Pursat and Prabal Hills with the Shantabun High-

Fig. 227.—Pulo Condor.
Scale 1 : 240,000.



lands. Along the coast they terminate in bold headlands, which are also continued seawards by a few rocky islets.

The only large river flowing east to the China Sea is the Hong-Kiang (Hoti-Kiang) of the Chinese, the Song-koi (Song-cai, Song-ka, Song-tha) of the Annamese, that is, the Red River of the French, who were the first Europeans to explore its course. On emerging from Yunnan, some 360 miles from the sea, it is already about 300 feet wide, and navigable for light craft. It was even ascended to Manhao, 60 miles farther up, by Dupuis, in 1871. Below Hung-hoa its volume is nearly doubled by the Song-bo (Kim-tu-ha), or "Black River," which joins it from China, and which is navigable for boats as far as the Laos country. The united stream, which is much obstructed by rapids, is here known as the Thao, and at last takes the title of Song-koi, or rather Shong-cai, that is, "Great River," below the confluence of the tributary known in various parts of its course as the

Kham, Bodé, Lieu, and Ca. About 90 miles from the sea it ramifies into the two main branches of the delta—the northern, which retains the name of Song-koi, and the southern, Song-hat or Dai; both of which develop in their turn a vast labyrinth of channels, back-waters and artificial canals, continually shifting with the floods and tides. Two side branches of the Song-koi flow northwards to another still more intricate delta formed by the Thai-binh, which under the name of the Song-kao flows from Lake Babé in a still unexplored frontier district. The Joint Delta advances far beyond the normal coast-line, describing a curve of 90 miles

Fig. 228.—Song-koi Delta.

Scale 1 : [illegible].

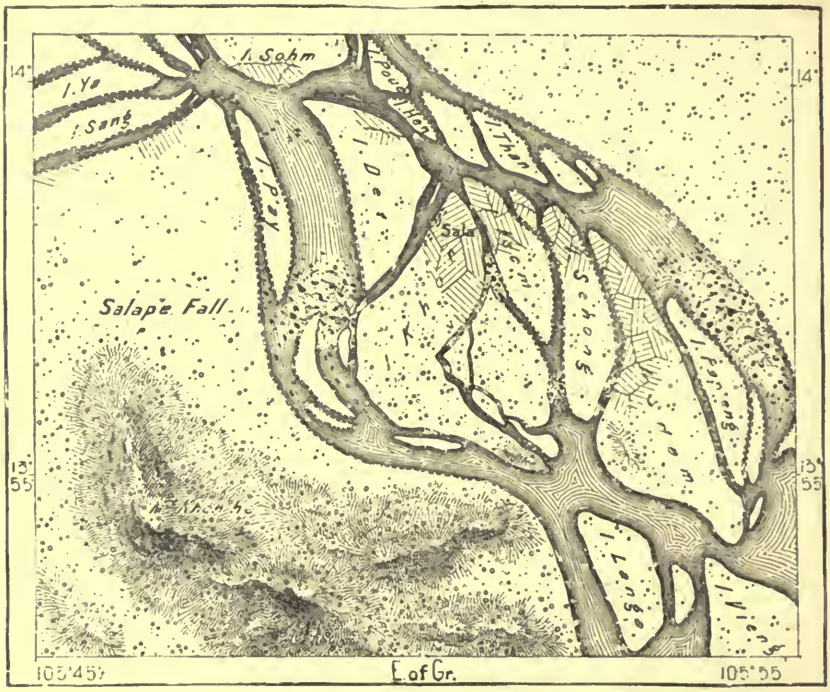
30 Miles.

concentric with another far more extensive, which is formed by the sedimentary matter deposited along the coast in the Gulf of Tongking.

The great artery of Farther India, formerly better known as the Camboja, but now generally called the Mekong (Mekhong, Meikong), was even in the last century still supposed to be a branch of the Ganges, one of those sacred "Ganga" flowing from Mount Meru. Under the name of Lantzan-kiang, or Kinlong-kiang, that is, "River of the Great Dragon," the Mekong rises in one of the long parallel valleys of East Tibet, between the Kinsha-kiang (Yangtze) and the Lutze-kiang (Salwen). But its upper course, where it passes through tremendous gorges, here

and there crossed by suspension bridges hundreds of yards above its foaming bed, has not yet been completely surveyed. The French expedition of 1866 got no farther than Xieng-hong, 300 miles below the iron bridge, crossing it on the route between Tali-fu and Bhamo. The stream, 300 or 400 yards broad at Xieng-hong, flows 120 miles lower down over a series of reefs and rapids on the frontier of Burma and Siam, which during the dry season completely obstruct the navigation. On entering Siamese territory it suddenly changes its southerly course, and for about 120 miles flows eastwards, as if intending to send its waters to the Gulf of Tongking. But at the confluence of the Nam-hu from China, it again trends southwards, retaining this direction as far as Xieng-kang, where it resumes its easterly

Fig. 229.—The Khong Falls.
Scale 1 : 180,000.



3 Miles.

course to the foot of the Cochin-Chinese Hills. Here the stream is contracted at some points to 100 and even 50 yards, with a depth of over 320 feet. But after the junction of its great tributary, the Se-mun, it plunges into a series of rapids, probably unsurpassed in extent by those of any other river on the globe. Everywhere its bed presents an unfinished aspect, abruptly varying from 300 to 50 yards in width, in one place forming a vast and almost motionless basin, in another rushing impetuously round the huge crags and islets obstructing its channel.

The Khong cataracts, which mark the limit of its middle course below Bassac, are formed by a barrier of rocky islands, which arrest the stream and cause it to ramify over a space upwards of 12 miles broad. At low water some of the branches

BOAT-RACING ON THE MEKONG.

run dry; others are so winding that no sudden falls are developed; but most of them are interrupted by cataracts, one of which has a vertical height of 50 feet. All these falls differ in aspect from each other, and their endless variety is heightened by the palms fringing the banks, the crags clothed with vegetation, and the distant hills seen here and there beyond the woodlands and cultivated plains. Below the confluence of the Attopö from the Annamese Hills, one of the branches between Shing-treng and Sombor is also obstructed by rapids; but the eastern channel is accessible to steamers at all seasons. Much of the traffic is carried on by means of bamboo rafts, some of which are 15 or even 20 tons burden.

Pnom-peñh, present capital of Camboja, 180 miles from the sea, marks the head of the Mekong delta, where the left branch continues its seaward course, but the right loses itself in the Toulé-sap, or "Sweet-water River," a lacustrine reservoir commonly known as the "Great Lake." The two channels, thus flowing in opposite directions, wind through a depression which was formerly a marine inlet, separated from the Gulf of Siam by the Purast range and some lower and isolated hills. The waters of this inlet were gradually separated from the sea by the alluvia of the Mekong, while the lacustrine depression was slowly changed to a fresh-water basin, which, however, is still inhabited by the porpoise, skate, and other marine species. Chinese documents, dating from the beginning of the vulgar era, still speak of the Great Lake as a gulf penetrating to Banon near Battambang.

During the floods between June and October, the lake is fed from the Mekong by a stream about 70 miles long, from 500 to 2,000 feet wide, and accessible to men-of-war. But at low water the flow is reversed, and the lake gradually discharges its contents into the Mekong. When flooded it is at least 65 miles long, with a mean breadth of 15, and a nearly uniform depth of 40 to 45 feet. It has an area of about 100 square miles, and a volume of perhaps 1,225 billion cubic feet. But the back-water from the Mekong also sends down large quantities of alluvia, by which the lacustrine cavity is being gradually filled in. The streams rising east of Bangkok, and now flowing to the lake, will then be collected in a single channel traversing the site of the present depression as a simple affluent of the Mekong. The Toulé-sap serves at present as a sort of trap for the myriads of fish brought down during the Mekong floods, and left in the hollows after the subsidence of the waters. At this period vast numbers of birds frequent the lake, which gives employment to as many as 30,000 Annamese, Siamese, Malay, and Cambojan fishermen. The Cambojans, who live chiefly on fish, have enough left to export from 9,000 to 10,000 tons to Lower Cochin-China.

Below Pnom-peñh the Mekong ramifies into two main branches, the Tien-giang in the east and the Han-giang in the west, which follow a nearly parallel course for about 120 miles. The Han-giang, called also the River of Bassac, enters the China Sea through two channels; whereas the Tien-giang develops a secondary delta, with numerous shifting mouths, connected by lateral branches with several old ramifications of the Mekong. Amongst these are the west and east Vaico, the river of Saigon and the Donnai (Dong-nai). West of the Han-giang the plains are also intersected by channels, now flowing directly to the Gulf of Siam; so that the

greater part of French Cochin-China really belongs to the region of the Mekong delta. The long peninsula terminating at Cape Camboja (Min-gan, or Ong-dok) is entirely alluvial, and between the extreme channels of the delta there is a coast-line of no less than 360 miles, besides the shallows and sandbanks which stretch for a further distance of some 30 miles seawards.

At Lakhon, in the Laos country, Delaporte estimates the discharge of the Mekong at 48,000 cubic feet per second, at the end of the dry season; at Bassac, below the Se-mun junction, Francis Garnier found a volume of 320,000 cubic feet in December, while the mean of 420,000 or 430,000 is said to rise during the floods to 2,200,000 and 2,500,000, and even more. The Mekong thus rivals the Irrawaddi in volume, although throughout its upper course the moist monsoons are intercepted by a double or triple range of mountains. But south of the Lao country most of the rain-bearing clouds discharge their contents on the western slopes.

Lying entirely within the tropical zone, Cochin-China is on the whole a torrid region, although in Tongking the glass may occasionally fall to 45° F. At Hué and Saigon it seems to be never less than 63° or 64° F.; but in the Mekong basin, separated from the sea by the Cochin-Chinese coast range, the climate is subject to far greater extremes, falling as low as 47° F. even in April. Here also the heat is much greater and more oppressive than on the seaboard. As in Cisgangetic India, the year is divided into a wet and a dry season, although the atmosphere is always more or less moist. The two seasons succeed each other somewhat abruptly, especially on the Gulf of Tongking, where the monsoon arrives in April, and is accompanied by thunder-storms and torrents of rain. These are followed towards the end of the year by the terrific cyclones which, in 1867, levelled all but three of the three hundred churches erected by the missionaries in that region.

As many as 12,000 vegetable species have been discovered in Cochin-China, whose flora has been carefully studied since the French occupation. The marshy plains and seaboard are covered with the mangrove, pandanus, and palm, which are succeeded farther inland by the cultivated tracts yielding rice, garden plants, and especially fruits, in surprising variety and abundance. The uplands between 2,000 and 3,000 feet in the Lao and Moi territories are clothed with dense virgin forests in which are intermingled many Himalayan, Chinese, and Japanese species. Here flourish the teak, ironwood, varnish plant, the eagle-wood, burnt only in royal palaces and temples, and a species of cinnamon highly appreciated by the pharmacists of Tongking. In the Saigon botanic-garden, the coffee, clove, nutmeg, indigo, pepper, sugar-cane, gutta-percha, caoutchouc, vanilla, jute, and other useful tropical plants are represented in all their varieties.

The Annamese fauna resembles that of Cisgangetic India, including the elephant, rhinoceros, wild buffalo, and the *dzin*, a species of ox probably identical with the mithun of the Mishmi tribes. As in India, the tiger is considered as a sort of god, whose teeth are worn as amulets, and whose praises are placarded on coloured paper outside the houses to turn away his wrath. The elephant is seldom domesticated by the Annamese, who prefer the buffalo and ox as pack animals. The native horse, a small weedy breed, is being replaced by better stock from India

MOI TYPES.

and Australia. Poultry and swine are very abundant, and, with fish and rice, form the staple food of the people.

Inhabitants of Cochin-China.

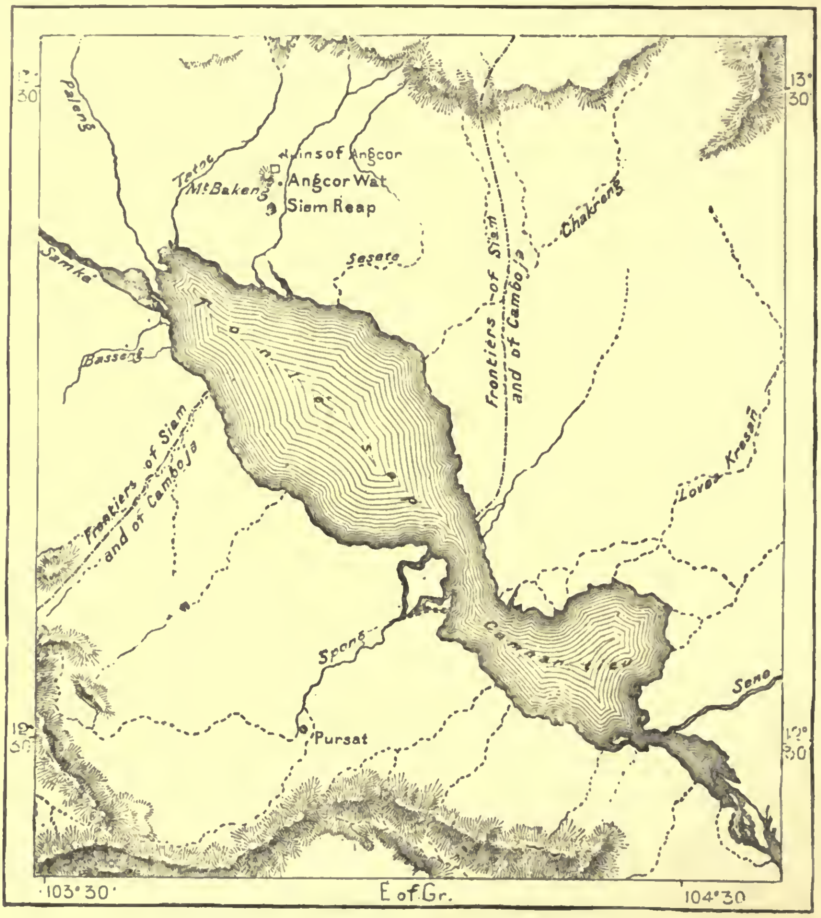
The wild tribes of Cochin-China, driven east by the Siamese and Laos, west and south by the Annamese, south-west by the Cambojans, are now limited mainly to the wooded plateaux and upland valleys. Most of them are known by some generic name, such as Muong in Tongking, Kha in Siam, Pnom in Camboja, Moi in Annam, Lolo in South China; while on the frontier of French Cochin-China, about the source of the Donnai, they call themselves Trao. They live generally in small groups, isolated from each other, and seldom meet except for war or traffic. The national arm is the bow, with which they shoot poisoned bamboo arrows to a distance of over 300 feet. All are agriculturists, cultivating the clearings obtained by firing the forests; but when pressed by hunger, they devour reptiles and all kinds of vermin, and organise plundering expeditions. Amid many local differences, all present certain features in common—middle size, brown complexion, darker than the Annamese, but lighter than the Hindu, depressed skull, broad low forehead, round face, less flat than the Mongol, straight horizontal eyes, rather full beard and even whiskers. Their habits, customs, and beliefs are also much alike, and although the languages differ greatly, the syntax and a large part of the vocabulary are identical. These dialects, which are radically distinct from the Annamese, are of simple structure, and, while rich in words expressing natural objects, are almost completely destitute of abstract terms.

In the south-eastern extremity of Cochin-China, and in Camboja, still survive the scattered fragments of the historical Tsiam (Cham, Khiam) race, who appear to have been at one time the most powerful nation in Farther India. According to Gagelin, they ruled over the whole region between the Menam and the Gulf of Tongking, and the memory of their dominion is said to be preserved in the name of Cochin-China, in which occur the Chinese signs, Co Cheng Ching—that is, "Old Tsiampa." But the national inscriptions, which may one day, perhaps, reveal the history of this people, are still undeciphered. They are commonly supposed to be of Malay stock, and are distinguished from the Annamese by their taller stature, more robust frame, and regular features. Of their language, about one-third consists of Malay elements mixed with Annamese and Cambojan terms; but over a half of the vocabulary shows no analogy with the speech of the surrounding races. Those of the Tsiams who retain the national name belong to the Hindu religious world, while the so-called Bak-ni are descended from Mohammedan proselytes; but several of their ceremonies, sun and moon worship, the use of the magician's wand, sanguinary rites, seem to be survivals from the old Pagan times.

Like the Tsiams, the Cambojans, or Khmers, are a race sprung from illustrious ancestry, but at present reduced to about 1,500,000, partly in the south-eastern provinces of Siam, partly forming a petty state under French protection, which is limited east and west by the Mekong and Gulf of Siam, north and south by the Great Lake and French Cochin-China. During the period of its prosperity the Cambojan

empire overshadowed a great part of Indo-China, and maintained regular intercourse with Cisgangetic India on the one hand, and on the other with the Island of Java. The centre of its power lay on the northern shores of the Great Lake, where the names of its great cities, the architecture and sculptures of its ruined temples, attest the successive influences of Brahmanism and Buddhism on the local culture. A native legend, based possibly on historic data, relates how a Hindu

Fig. 230.—Great Lake of Camboja.
Scale 1 : 1,250,000.



30 Miles.

prince migrated with ten millions of his subjects, some twenty-three centuries ago, from Indraspathi (Delhi) to Camboja, while the present dynasty claims descent from a Benares family. But still more active relations seem to have been maintained with Lanka (Ceylon), which island has acquired almost a sacred character in the eyes of the Cambojans. The term Camboja itself (Kampushea, Kamp'osha) has by some writers been wrongly identified with the Kamboja of Sanskrit geography. It simply means the "land of the Kammen," or "Khmer."

CAMBODIAN TYPES—THE QUEEN MOTHER.

Although some years under the French protectorate, the political institutions of the Cambojan state have undergone little change. The king, who still enjoys absolute power over the life and property of his subjects, chooses his own mandarins, and these magistrates dispense justice in favour of the highest bidders. Trade is a royal monopoly, sold mostly to energetic Chinese contractors; and slavery has not yet been abolished, although the severity of the system has been somewhat miti-

Fig. 231.—Cambojan Type and Costume—Eldest Son of Narodom

gated since 1877. Ordinary slaves now receive a daily pittance, which may help to purchase their freedom; for they are no longer considered as bondmen for life, being treated rather as servants of their creditors until the price of manumission is paid up. The State slaves also, mostly descendants of political prisoners, are bound to serve the king and mandarins for three months only, being quite free to come and go as they please for the rest of the year.

On the eastern slopes, and in the Lower Mekong basin, the dominant race are the Giao-shi (Giao-kii) or Annamese, who are of doubtful origin, but resemble the Chinese more than any other people of Farther India. Affiliated by some to the Malays, by others to the Chinese, Otto Kunze regards them as akin to the Japanese. According to the local traditions and records they have gradually spread along the coast from Tongking southwards to the extremity of the Peninsula. After driving the Tsiams into the interior, they penetrated about 1650 to the Lower Mekong, which region formerly belonged to Camboja, but is now properly called French Cochin-China. Here the Annamese, having driven out or exterminated most of the Cambojans, have long formed the great majority of the population. Compared with their Moi and Khmer neighbours, they are of small stature, but well proportioned and very active. Owing to the peculiar formation of the great toe, they are able to pick up small objects with their prehensile feet, a characteristic said to distinguish all the Annamese of pure stock. The features are broad, flat, and more lozenge-shaped than the Chinese, while the complexion varies from a dirty white to chocolate brown, according to the locality and pursuits. Both sexes age rapidly, and wear the hair gathered on the crown of the head, so as to leave the ears exposed. For men and women alike, the dress consists of broad trowsers and a flowing robe, to which the former generally add a conic hat, the latter a sort of light round head-dress, nearly concealing the face.

The Annamese is outwardly cold and impassive, but is fond of his home, respects his elders, consults his wife on all weighty matters, and carefully educates his children. He is naturally of a very mild temperament, and the national proverb, "Nature is generous, we should imitate her," is often on his lips Hence he is neither quarrelsome nor aggressive, and unless compelled to defend himself never hesitates to avoid attack by flight. He is passionately attached to his native land, never leaving it without the deepest regret. The children, who are quick, intelligent, and fond of learning, have eagerly flocked to the new schools opened in French Cochin-China, where nearly all the rising generation has learnt to read, and write in Latin characters. Merely nominal Buddhists, the Annamese are even less religious than the Chinese, and the Confucian system is professed by the lettered classes as a cloak to conceal a scoffing spirit beneath fine moral maxims. As in China, the worship of the natural forces, of ancestry, and spirits is the true national religion, especially in Tongking, where every village has its protecting spirit, every spirit its temple. In this field the early Catholic missionaries had great success, numbering as many as 420,000 converts about the middle of the seventeenth century. But most of them were compelled by subsequent persecutions to apostatise. Nevertheless, there are still over 70,000 Christians in Tongking and 50,000 in French Cochin-China. The children of French and Annamese parents, who are constantly increasing in numbers, become readily acclimatised, and are very pretty, with chestnut hair, and a somewhat fairer complexion than that of the natives.

The Annamese language is so nearly related to the Chinese that the immigrants from Fokien or Canton soon abandon their provincial dialects for the national speech of Cochin-China. In the French province a sort of trade jargon has sprung up

composed of Annamese, Chinese, French, Portuguese, Malay, and English elements thrown together without any grammatical structure. The native literature, consisting chiefly of popular songs and proverbs, employs the Chinese ideographic

Fig. 232.—Annamese Village Chiefs and Women.

system; but in the French schools the Latin alphabet has been adopted, with diacritic marks to indicate the six tones of the Annamese language.

The Chinese social and political institutions have served as the prototypes for those of Annam, which was for over one thousand years a simple province of the Middle Kingdom. From China it has received its letters, arts, sciences, laws and

religions, and that country it still regards as its model in most questions of government and administration. The mandarins perform the same functions, the Annamese code is based on the same principles of justice, the *lang* or communes are organised in the same way, being governed by a Council of Notables entirely independent of the central power in all matters of police and taxation. But to the Chinese influences are now opposed those of France, which, by its occupation of a portion of South Cochin-China in 1862, has doubled its territory, besides extending her protectorate over Camboja, and obtaining many substantial privileges by the political and commercial treaties concluded with Annam in 1874 and 1883.

Even French Cochin-China proper, although spoken of as a "colony," is purely a military conquest held by a handful of Europeans, who are centred chiefly at Saigon and on the Lower Mekong. Mostly officials or missionaries, they remain only a few years in the country, never forming agricultural settlements, and leaving the local trade to the Chinese. The French are in a minority even among European merchants, and most of the carrying trade is in the hands of British shippers. On the other hand universal suffrage and other French political institutions have been introduced, and since 1880 the French penal code has been extended, with some modifications, to all the natives. The revenue is at present insufficient to meet the local expenditure, the yearly deficit being estimated at about £400,000; yet a large income continues to be derived from the monopolies on opium, rice, spirits, and the public gambling-houses.

Topography.

In the Lao country the so-called towns on the Upper Mekong are little more than market-places, where a few native huts are grouped round the governor's house and the pagoda. Such is *Xieng-hong*, near the Chinese frontier, capital of the State of like name, which appears to be tributary both to China and Burma. A more important place is *Xieng-tong*, also capital of a Lao State, occupying portion of the uplands which form the water-parting between the Mekong and Salwen. But *Muong-yong*, lying nearer to the Mekong, *Xieng-sen* and *Xieng-hai*, in Siamese Laos, are now mere heaps of ruins, where a few statues of Buddha are visible here and there amid the dense foliage. At present the chief centre of population in this region is *Luang-prabang*, on the left bank of the Mekong, at the confluence of theNam-kan, where the river suddenly bends southwards. With its suburbs this place covers a space of about 6 miles, and its fairs are much frequented by the surrounding peoples. The royal palace occupies a vast enclosure communicating by a flight of several hundred steps with a pagoda on the summit of a neighbouring hill. Luang-prabang is the capital of the most powerful of all the Lao States, and before the Mohammedan revolt in Yunnan paid tribute both to China and Siam. Here died in 1861 the explorer Henri Mouhot, to whose memory the French expedition raised a monument in 1867.

Selected as capital of Camboja, in consequence of its strong strategic position at the junction of four water highways, Pnom-peñh, or *Namvam*, occupies

one of those sites where cities never fail to recover from every fresh disaster. When burnt by the Siamese it was said to have had a population of 50,000, and since then it has again become the largest place between Bangkok and Saigon; as capital of Camboja, it was preceded by *Udong*, which stood a little farther north-west, on the branch of the Mekong communicating with the Great Lake. But in still more ancient times, when the Cambojan empire occupied the whole region

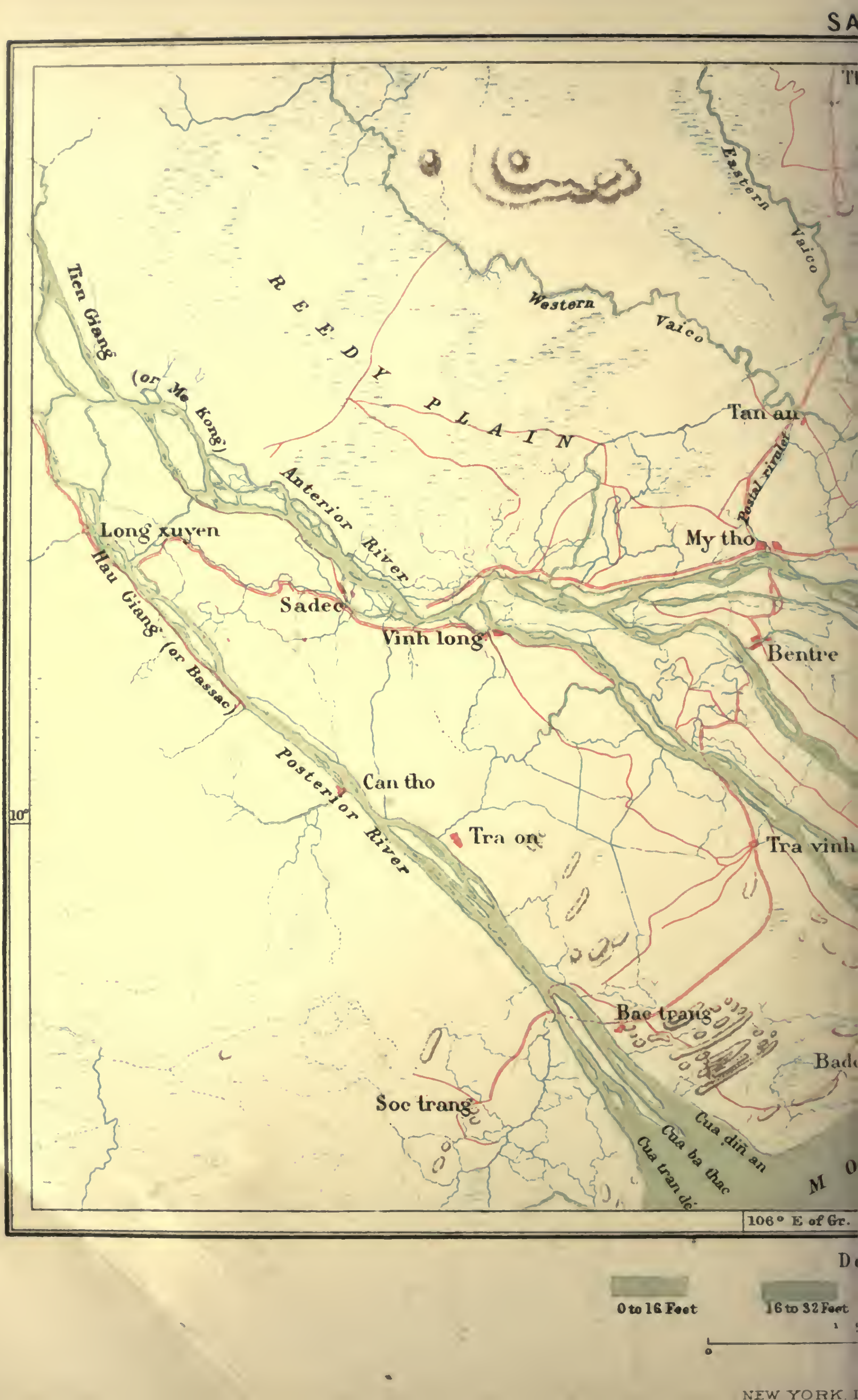
Fig. 233.—Anokor-Wat—Chief Façade of the Temple.

between the Lower Mekong and the Menam, the natural centre of the State lay on the shores of the Great Lake, or in the plains stretching westwards to Battambang. Here stood the city of *Indra*, famous in legend, and still recalled by numerous ruins scattered over the forests. Here, also, near the present town of *Siėm-reáp*, are found the remains of the temples and palaces of *Angkor*, the most remarkable monuments in Farther India. Known to the Catholic missionaries since the sixteenth century, and visited, in 1850, by Bouillevaux, these magnificent buildings were not thoroughly

surveyed till quite recently. They date partly from the tenth century, and represent a particular phase of Buddhism, at a time when, under the direct influence of India and Ceylon, the myths of Brahma, Siva, Vishnu, and Rama became interwoven with those of the "Great Doctrine." Amongst the statues and reliefs are some representing the four-headed Brahma, the trimurti, characters and scenes from the Hindu epics; while others betray clear traces of snake-worship. The temple inscriptions remained long undeciphered; but several are now found to be bilingual, Sanskrit being employed side by side with the vernacular. Thanks to this circumstance, Keru in Europe, and Aymonier in Camboja, have succeeded in interpreting various inscriptions attesting the influence of Indian culture at this epoch of Cambojan history. The oldest dates from the year 667 of the new era. The Khmer art, which may be studied in Europe by the fragments preserved in the Delaporte Museum at Compiègne, blends harmoniously together the varied traditions of Hindu architecture, and henceforth takes its place amongst those which have given birth to monumental works. Avenues lined with giants or fantastic animals, flights of steps guarded by lions, terraces and galleries crowded with statues, sculptured peristyles, pointed vaults, storied pyramids adorned with fan-shaped carvings, follow in endless succession. A simple portal or column rivets the gaze by its exquisite details; yet such is the marvellous simplicity of the general disposition that confusion is nowhere created by the lavish ornamentations, as is so often the case in the monuments of Cisgangetic India. The beauty of these glorious buildings is even heightened by the rank vegetation, the wreaths of creepers and forest trees, which have run riot amid this wilderness of architectural remains.

The ruins of other cities, temples, and fortresses are scattered in profusion over this lacustrine region, whose ancient culture seems to have subsided with the subsidence of the waters. The Great Lake withdrew from Angkor, the marine inlet became gradually filled in, the surrounding plains were converted into marshes, the population melted slowly away, and to the busy cities and thronged temples succeeded the scattered hovels of a decrepit people, who have lost the very traditions of a glorious past.

Below Pnom-peñh, *Chaudok*, on the right branch of the Mekong, and within French Cochin-China, has the advantage of direct communication with the Gulf of Siam by a navigable canal running to *Hatien* on the coast. But *Kampot*, farther north-west on the Cambojan seaboard, has a deeper and more sheltered harbour, which has been frequented for ages by Chinese and Malay navigators. In the secondary delta, developed by the eastern branch of the Mekong, the chief places are the fortified port of *Viñh-long* and *Mythô*, which communicates by a navigable channel with *Saigon*, capital of the French possessions, and the largest city between Bangkok and Hanoi. Since its occupation by the French in 1859, Saigon, the *Giadiñh* of the Annamese, has acquired an almost European aspect, especially round about the handsome palace of the governor. Although not situated on a branch of the Mekong, the depth of its channel has contributed to make it the chief outport of that river, with which it will also be soon connected by a short railway running to Mytho. Centre of the French possessions in the extreme east, Saigon



Eastern Vaico
Western Vaico
Vaico
REEDY PLAIN
Tien Giang (or Me Kong)
Anterior River
Tan an
Postal rivulet
My tho
Long xuyen
Hau Giang (or Bassac)
Sadec
Vinh long
Bentre
Posterior River
Can tho
Tra on
Tra vinh
Bac trang
Soc trang
Cua dĩn an
Cua ba thac
Cua tran dé
10°
106° E of Gr.
0 to 16 Feet
16 to 32 Feet

ON

s

32 to 64 Feet

64 & upwards.

o

20 Miles

PLETON & Co

SCENE ON THE CHINESE ARROYO, NEAR THE SAIGON CONFLUENCE.

already contains a vast arsenal, while the old citadel has recently been much enlarged and strengthened. A large trade has here also been developed, especially with Singapore, and more than half the rice crop of French Cochin-China is shipped at this port. Much of the retail business is transacted in the neighbouring Chinese town of *Cholon*, 3 miles to the south-west on the Chinese Arroyo.

In Annam the largest city is *Hanòi*, or *Kesho*, capital of Tongking, on the right bank of the Red River, which is navigable to this point by steamers drawing

Fig. 234.—Hué.
Scale 1 : 120,000.

6 or 7 feet. For its industries, arts, and general culture, Hanoi also takes the foremost rank; and it is specially noted for its carved cabinet work, lacquer-ware, and nacre inlaid ornaments. Most of the houses are of brick or stone, and the streets are paved in marble. A separate quarter is occupied by several thousand

Chinese, who monopolise the trade with the Middle Kingdom. The vast fortress of Hanoi, erected by French engineers at the end of the last century, has a circuit of nearly 4 miles. In the neighbourhood is the French concession with its consular buildings and a small garrison. Above and below Hanoi are the riverain ports of *Song-tai* and *Nam-diñh*; while *Haipong*, opened to European trade in 1874, lies at the mouth of a northern branch of the delta. The trade of this port, which is chiefly in Chinese wares, or in goods intended for the Chinese market, is mostly in the hands of the English, and about 35 per cent. of the shipping flies the British flag. Haipong communicates by a navigable branch of the delta with the populous town of *Haidzuong*, which lies east of Hanoi, on the Thai-biñh, and is defended by one of the strongest fortresses in the kingdom.

Hué (*Thua-Thieu*, or *Pu-thua*), capital of Annam, is mentioned in the fourteenth century as having at one time belonged to the Tsiam people. The citadel, erected at the beginning of this century by French engineers for the Emperor Gialong, includes the barracks, artillery grounds, arsenals, granaries, and state prisons. In the centre are the royal palaces, while trade is restricted mainly to the suburbs and to the port of *Thuan-An*, which is defended by several forts. Unfortunately, the bar is never more than 12 feet deep, and the place is almost inaccessible during the winter season. In virtue of the treaties, some buildings have recently been erected at Hué for the French resident and officials, and a neighbouring hill glitters with the gilded roofs of palaces containing the royal tombs, with the precious metals, gems, and other costly objects deposited with them. Hué is connected northwards with Hanoi, southwards, through *Turane*, with Saigon, by a regular postal service with "trams," or stages, at intervals of from 8 to 12 miles along the only main highway in the kingdom.

CHAPTER XXIII.

PENINSULA OF MALACCA.

TENASSERIM.—STRAITS SETTLEMENTS.—SIAMESE TERRITORY.—PERAK.—PAHANG.—SELANGOR.—NEGRI SEMBILAN.—JOHOR.

THE Malay Peninsula forms geologically a southern extension of the ranges separating the Salwen and Menam river basins. In its flora and fauna it also closely resembles Farther India proper, the few contrasts being due to its greater proximity to the equator. But the inhabitants of the southern provinces belong to different stocks, while the position of its seaports at the extremity of the continent have given it a commanding position in the history of trade and navigation. The early Arab trading communities on the shores of this marine highway have been successively followed by the Portuguese, Dutch, and English. At present the whole western seaboard, between the Salwen estuary and the Isthmus of Kra, is included in British Burma; farther south three enclaves, besides the two islands of Pulo Penang and Singapore, also form part of the British colonial empire; and it is from this base that the interior is being gradually brought within civilising influences. Nearly the whole west coast is also under British protection, while several of the petty sultans, who share the rest of the land between them, are under the control of the local English administrators. Lastly, more than half of the entire population appears to be concentrated within the British territory, which is less than a third the size of the independent states and Siamese provinces.

Although Malacca is mainly a hilly region, the highlands do not develop a continuous central range, but are broken by broad river valleys into unequal fragments, running north and south, or north-west and south-east, either in isolated or parallel ridges. Beyond these ridges the lowlands are interrupted by detached masses, some of which are high enough to be visible from both seas, and nearly the whole surface is still clad with a dense forest vegetation. South of Maulmein all the streams, except a few torrents flowing directly seawards, flow with surprising uniformity parallel with the coast and the ranges, which collectively form the backbone of the Peninsula. Hence, although rising near the

sea, many of these rivers acquire a considerable development in the lateral valleys. Thus the Atteran winds in a long northerly course to the Salwen estuary, while the Tavoy flows in the opposite direction for about 120 miles. A still more remarkable instance is the great Tenasserim River, which runs in three distinct sections—first north-west, parallel with the Tavoy estuary, then south to Tenasserim, where it again turns abruptly west and north-west to the coast, after a total course of no less than 300 miles. A similar parallelism is maintained farther south, both by the Lainya and the Kra, or Pakshan, which last forms the southern limit of British Burma. The Mergui Islands, which fringe the Tenasserim coast for about 250 miles, are themselves the scattered fragments of partly submerged ranges disposed in several chains parallel with the axis of the Peninsula, and consisting of the same granitic, porphyry, and conglomerate formations.

The northern peninsular range, forming the natural frontier of Tenasserim and Siam, abounds in tin, which is now being actively worked by Chinese miners. This range is continued south of Tenasserim in parallel sections to the extremity of the Peninsula. But the system is broken at several points by profound fissures, such as those of the river Pakshan, draining to the Bay of Bengal, and the *Chumpong*, to the Gulf of Siam. Another gap occurs farther south, where the Peninsula turns abruptly towards the south-east, and where there doubtless exists a line of breakage, which is continued seawards by the Andaman Archipelago and Sumatra, which are respectively disposed parallel with the two sections of the Malay Peninsula. In the Ligor district also, still farther south, the mainland is again contracted between Pulo Tantalam, on the east side, and the chains of islands skirting the coast in Malacca Strait. During the epoch of Buddhist propaganda the route between Southern India and Camboja lay apparently across this Isthmus of Ligor, although in modern times the narrower Isthmus of Kra, lying nearer to the Menam estuary, has been much more frequented. From the mouth of the Chumpong to the northern extremity of the Pakshan estuary, the distance in a straight line is only 27 miles, and the highest point, rising scarcely 100 feet above sea level, is crossed by a good road. The project has often been discussed of cutting a navigable canal across the Isthmus of Kra, whereby the voyage between Calcutta and Canton would be shortened by 660 miles, and that between Mergui and Bangkok by 1,300 miles. Such a route, if made deep enough, would certainly be adopted by most of the vessels which have now to go round by Singapore or Batavia. Tremenhere originally proposed dredging the Pakshan as far as the village of Kra, then tunnelling the highest point, and reaching the Gulf of Siam by the alluvial plain of the Champong. Schomburgk suggested a point much farther south, where the Pakshan is everywhere at least 30 feet deep; while Deloncle and Dru prefer intermediate lines running from the Pakshan below the rapids to Tasan, on the Tayung, or Upper Chumpong.

East of the British province of Wellesley, and of the native state of Perak, the Upper Perak River runs north and south, parallel with the coast, between two ranges over 3,000 feet high, and in the Ulu-Tumulang peak rising to 6,500 feet. The eastern range is pierced by the river Kanta, while the western, or Larut

range, disappears near the coast. But east of the Perak estuary the detached Gunong-Raja, or "King's Mount," attains an elevation of 6,550 feet; and according to Daly, some of the neighbouring peaks rise 1,300 feet higher. This isolated mass is separated by a partly-surveyed hilly district from another group of unexplored mountains, which Miklukho Maclay believes to be the highest in the Peninsula, and which is limited southwards by the river Pahang flowing to the China Sea. Beyond this point a large portion of the east side is occupied by marshy plains, while the west coast is skirted nearly to the town of Malacca by a chain rising to

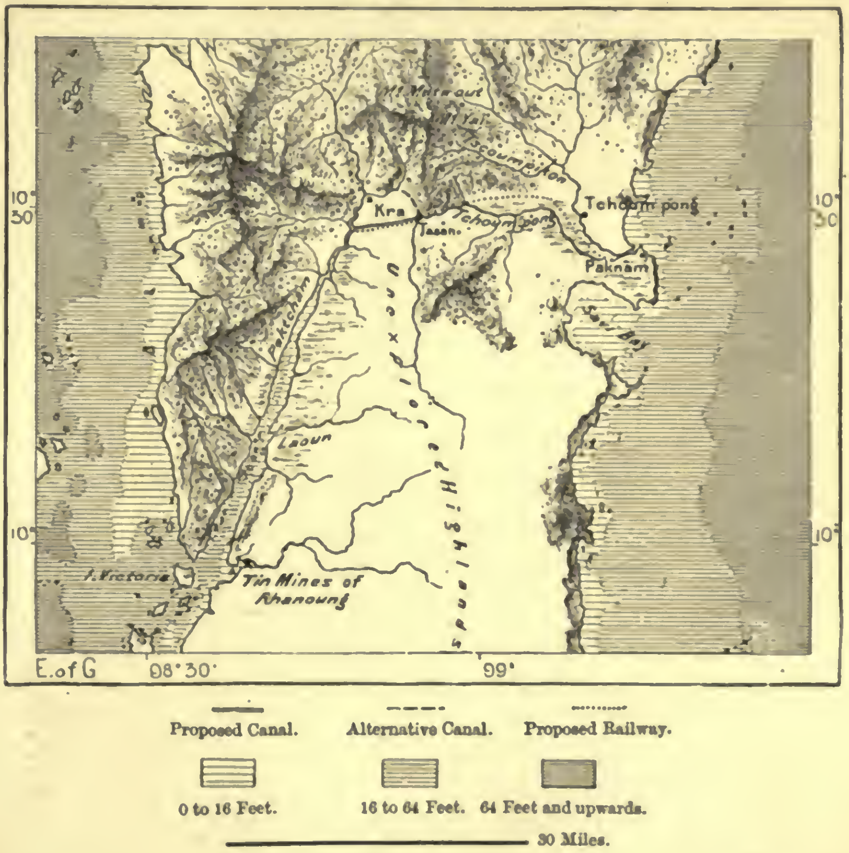


Fig. 235.—Isthmus of Kra.
Scale 1 : 1,250,000.

heights of 5,000 or 6,000 feet. In a line with this chain, but completely isolated from it, stands Mount Ophir (3,850 feet), so named by the early European navigators, everywhere in search of the mountain whence Solomon obtained his gold. East of Mount Ophir the system is continued to the extremity of the Peninsula, at Capes Johor and Ramenia (Romania), and beyond it to the island of Singapore, which belongs geologically to the mainland. The intervening channel, which has the appearance rather of a river than an arm of the sea, runs transversely to the main peninsular axis for over 30 miles, with a mean breadth of 4,000 or 5,000 feet.

The mountains of Malacca consist mainly of granites and sandstones. At their

contact with the lower conglomerates and clays, an alluvial zone a few yards thick

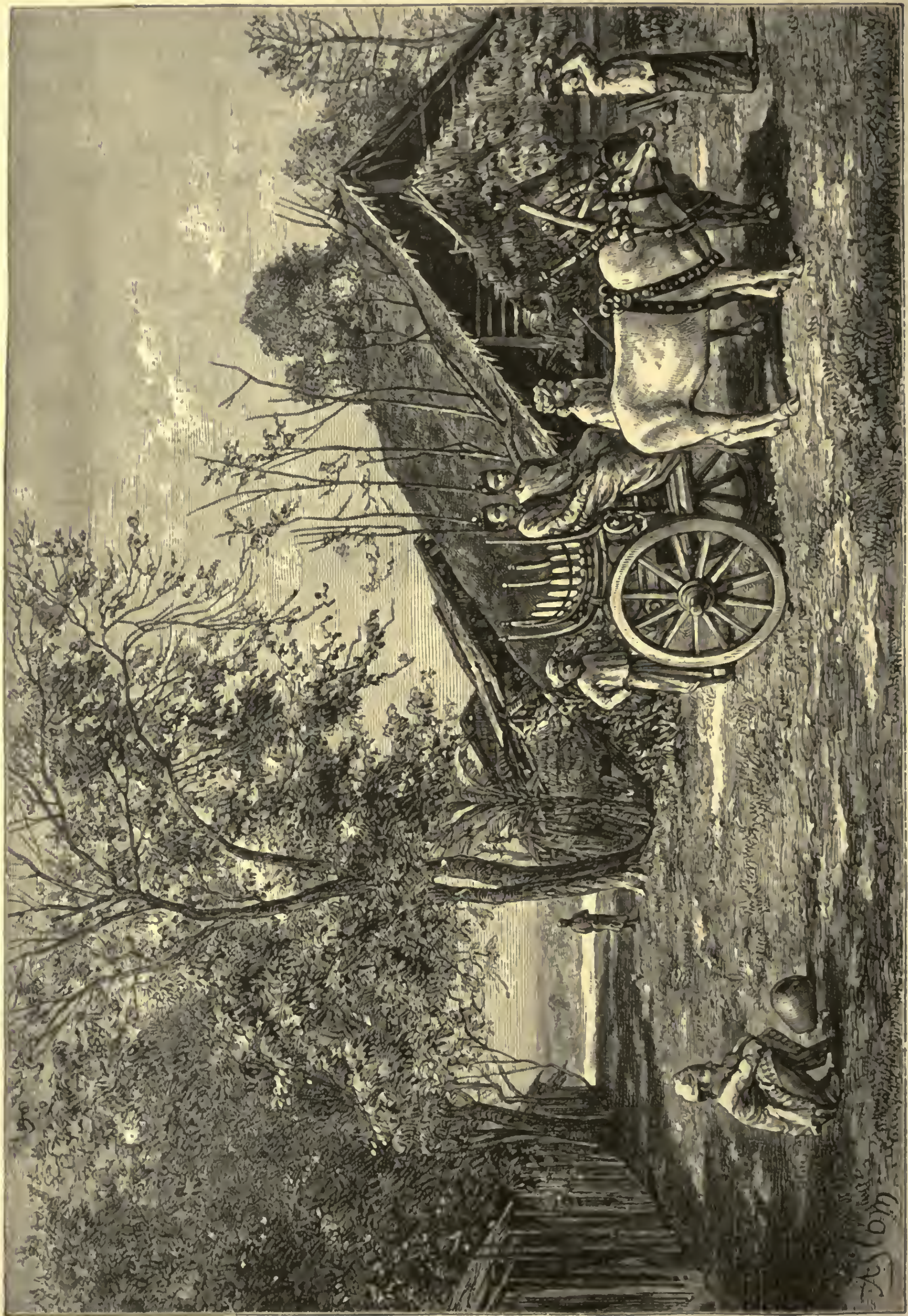


Fig. 236.—Landscape in Tenasserim—View taken at Tavoy.

rests on extensive deposits of tin, and gold is washed down by nearly all the

streams. The present annual yield of tin exceeds £320,000, although the mines are systematically worked only in the English possessions.

In Tenasserim and on the west slopes of the Malacca ranges, the annual rainfall exceeds 120 inches. Hence the Perak, Bernam, Selangor, Klang, Moar, Palang Rivers are all navigable by steamers as far as the tides reach, and by small craft to the foot of the hills. But all these streams are obstructed by dangerous rapids in their upper course. Large quantities of sedimentary matter are yearly washed down and spread in successive layers along the seaboard. In this way a new line of coast is being developed in some places, while Pulo Pinang and other islands are being gradually connected with the mainland. The channel flowing

Fig. 237.—Island of Singapore.
Scale 1 : 550,000.

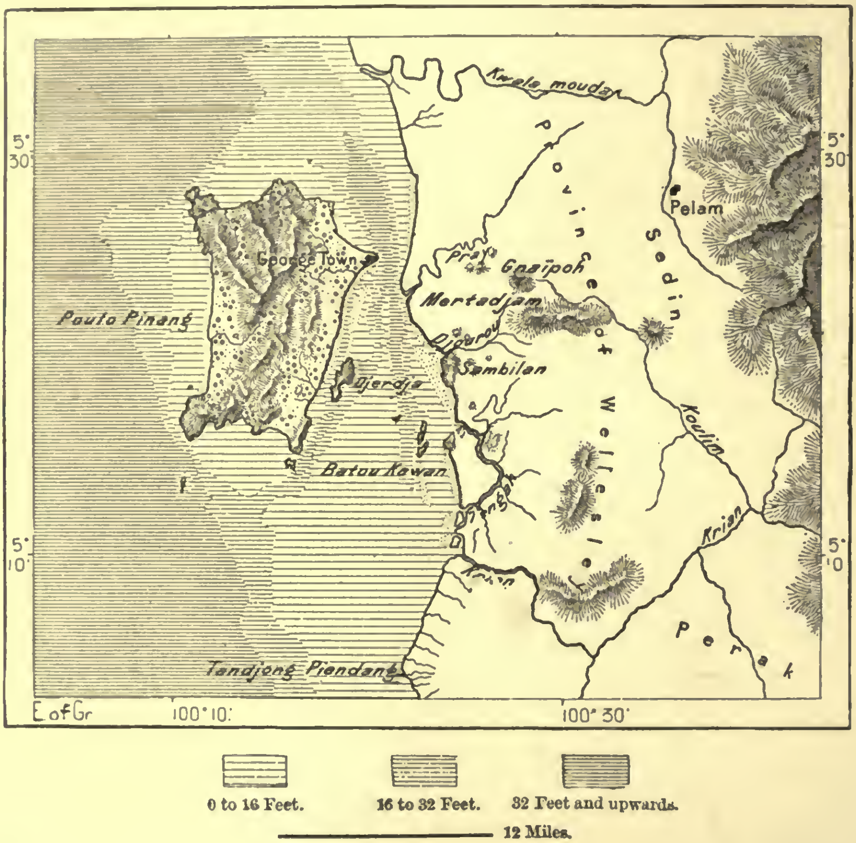
between Pulo Pinang and the province of Wellesley has thus been reduced from about 12 to less than 2 miles at the narrowest point.

Inhabitants of Malacca.

In the Tenasserim highlands the Karens and other uncivilised peoples are conterminous with the Burmese and Talaings in the west and with the Siamese on the east side. On this coast are also found the rude fishing communities of the Silongs or Selongs, who encamp during the south-west monsoon on the Mergui islands, and at other times reside chiefly in their boats or on the beach. In the Malay Peninsula the uncivilised element is represented by various tribes, divided

into countless clans, all collectively known to the Malays as Orang Binua, or "Men of the Soil"; Orang-utan, "Men of the Woods"; Orang Bukit, "Hillmen"; Orang Ubu, "River Men"; Orang-darat-liar, "Wild Men"; or simply Orang Ulon, "Inland People." The terror inspired by these aborigines, and the atrocities of which they have been the victims, have given rise to many strange legends amongst the civilised Malays, who speak, or spoke of them as men with tails, or armed with tusks, or covered with dense fur, or possessed of feet 4 or 5 feet long. Those more definitely known as Samangs on the west slope, and Sakais on the east

Fig. 238.—Pulo Pinang and Wellesley.
Scale 1 : 700,000.



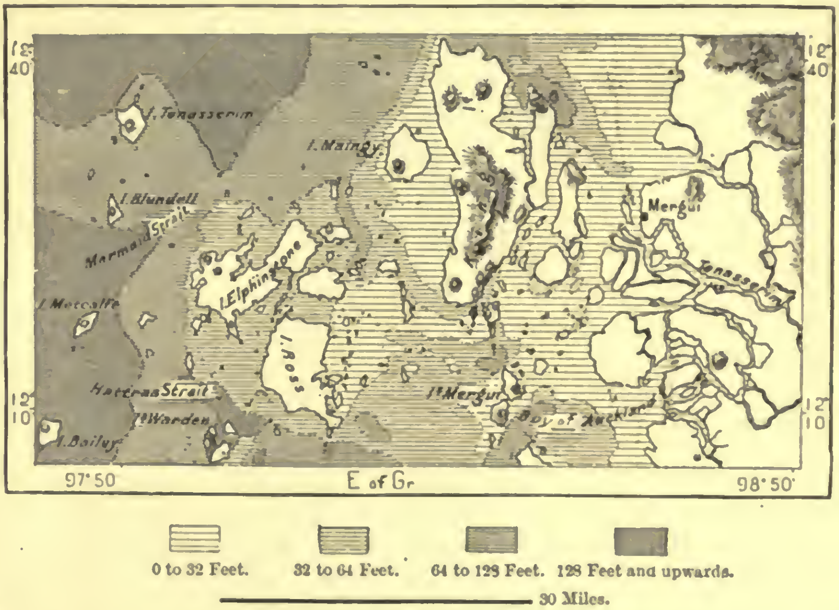
slope, and in the valleys of the interior, seem to have kept most aloof from contact with the Malays. All travellers by whom they have been visited describe them as of dark complexion and small stature, with flat nose, broad nostrils, frizzly hair, and group them either with the New Guinea Papuans or the Negritos of the Andaman Islands and the Philippines. Most of them go nearly naked, and some do not even build huts, passing the night in the trees. Their only weapons are a knife and bow with poisoned arrows, yet some of the tribes seem to recognise a chief, whose widow succeeds at his death. The women alone practise a little tattooing on the cheeks; marriage is attended by no ceremony; the child takes the

name of the tree under the shelter of which it was born, and according to Miklukho Maclay, promiscuous unions prevail even of a more primitive type than those of the Nairs on the Malabar coast. Most of the Binua speak Malay, although some old men converse only in the language of their ancestors, which is said to differ little from that of the New Guinea tribes. According to the popular belief, the gatherers of camphor cannot hope for success unless they address the trees in the old speech. But the race is threatened with extinction in the near future, and soon few will have survived except the "tamed" Orangs, already so modified by crossings with the Malàys and Chinese that they have lost all their native characteristics.

Beyond the large towns, where the Chinese prevail, the Malays constitute the great bulk of the population. Although the national name is said by Veth to mean

Fig. 239—Mergui.

Scale 1 : 1,100,000.

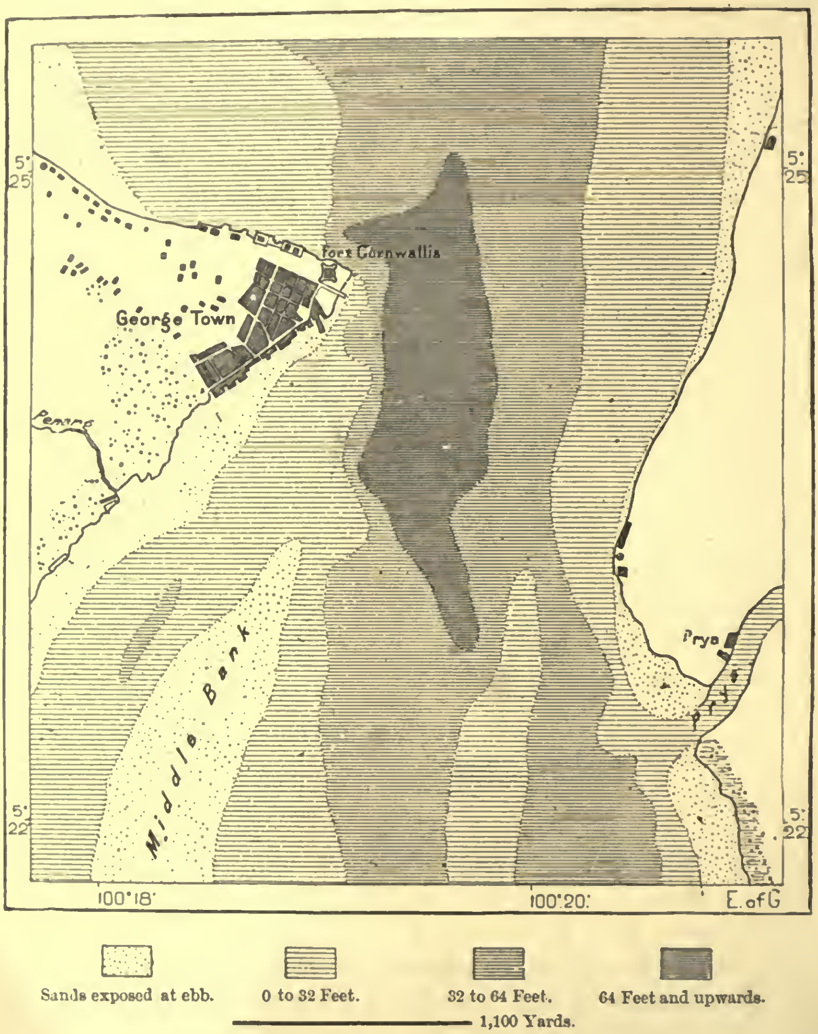


"Hillmen," they are settled mostly on the plains and seaboard. Opinions differ as to the original centre of evolution of the Malay race, which is now scattered over the Oceanic regions, from Madagascar to the Pacific. But their primitive home does not appear to have been the peninsula of Malacca, for their own traditions point to other lands, and they themselves recognise the Negritos as the true aborigines. Physically they resemble their Borneo kinsmen, and are distinguished by their small stature, lithe but vigorous frame, small eyes, broad features, high cheek-bones, coarse black hair, and intelligent expression. Apart from the Orang-laut, or floating communities, which have always been more or less addicted to piracy, the great bulk of the nation has long consisted of settled agriculturists, and under normal conditions they are certainly one of the most sociable and peaceable of Asiatic races. In the villages every man respects his neighbour's rights, and nowhere

else does more real equality prevail. No one knows better than the Malay how to curb his passions; no one displays greater deference and courtesy towards his fellows. But he expects a like return; and while consideration secures his devotion, real or fancied wrongs will at times drive him to acts of blind and sudden vengeance. On such occasions he becomes altogether uncontrollable, and runs "amuck," recklessly attacking all crossing his path, until he is disarmed or cut down like a

Fig. 240.—George Town.

Scale 1 : 65,000.



wild beast. Running amuck is at times also a funeral ceremony, their ancestors thirsting for the blood poured out by devoted friends, who at the same time offer their own lives with those of their victims.

The supremacy of the Malays in the Peninsula is now seriously threatened by the intruding Chinese, who already form over a third of the population in the British settlements. They are also gaining a footing in the protected and

independent states. But many of these immigrants, who are mostly from South China, marry Malay women, and their children, while remaining Chinese, adopt the local usages. Artisans, peasants, miners, dealers, brokers, they adapt themselves to all pursuits, and their English rulers have at times had to fear lest the civil power itself should pass into the hands of these industrious colonists. They dread especially the Chinese secret societies, whose members bind themselves never to appeal to the European magistrates, and to recognise no authority except that of the association. But the danger to the public safety is diminished both by the internal feuds of these bodies, and by the natural hostility of the Malays to the Chinese, who are also kept in order in the mining districts by a police drawn from the most devoted Sikh and Gurkha regiments.

The Hindus in the Straits Settlements and petty states are divided into several groups, according to their nationality. The Bengali, recognised by their red turbans, keep aloof from the Malabars of Southern India, and distinct quarters are also occupied by the Klings of Madras. The Santals, Oraons, Kols, and other coolies engaged on the plantations are confined to the rural districts. The so-called "Portuguese" of Pinang, Malacca, and Singapore have become darker than the Malays, and few now recall the features of the Souzas, Castros, or Albuquerques from whom they claim descent. The varied features and customs of this cosmopolitan population are increased by the presence of some Arabs, Armenians, Jews, Eurasians, and Europeans, all either officials, merchants, or planters.

Topography.

Notwithstanding their proximity to the equator, the towns in the British settlements of Malaysia are amongst the most salubrious in the east, and here European families easily become permanently acclimatised. But the ports on the west coast of Maulmein, such as *Tavoy* and *Mergui*, have but little trade; while *Tenasserim*, which gives its name to one of the three administrative divisions of British Burma, is a mere village frequented only by a few boats of light draught. The fishermen of this coast have contrived to domesticate the boa-constrictor, which lives on good terms with their cats and dogs, sharing in the same food of eggs and rice, and forming an indispensable companion on all their expeditions.

The district south of the Pakshan belongs either to Siam or to tributary rajas. Here the large island of Salang (Ceylon, or Junk-Ceylon) forms with the mainland a group of spacious harbours, where was probably situated Kalah, the famous seaport of the early Arab navigators. On the east coast *Ligor* and *Patani* enjoyed some traffic before the rise of Batavia, Pinang, and Singapore.

Pulo Pinang, "Areca-nut Island," has been in the hands of the English for about a century. Received by an English navigator in dower with the daughter of a raja of Kedah it became a British colony in 1786, and soon became appreciated as a health-resort by the invalided officials and merchants of India. *Georgetown* (Tanjong), capital of Prince of Wales Island, as Pinang is also called, lies at the foot of a wooded hill 2,750 feet high at the northern extremity facing the main-

land. Its well-sheltered harbour is accessible to large vessels, and enjoys a considerable trade in tin, pepper, coconut-oil, and ratan canes. During the Achin war the Dutch have drawn their supplies chiefly from Pinang. The Catholic seminary of Georgetown, founded in 1808, is resorted to by the missionaries of China and Farther India, in order to study the languages of the extreme east.

In the adjacent province of Wellesley the population is almost entirely rural, and no towns, properly so called, are met until we enter the protected State of Perak, which comprises nearly all the river basin of like name east and south of the British settlement. *Kwala Kangsa,* capital of Perak, lies on the right bank of the river somewhat inland. A large place is the port of *Lerut,* seat of a British resident, and centre of a large tin trade. *Taiping,* which will soon be connected with the coast by a railway, is also an important market. Between Lerut and the

Fig. 241.—Malacca.
Scale 1 : 900,000.

mouth of the Perak, the island of Dinding and a strip of territory nearly as large as the province of Wellesley have been annexed to the British colonial possessions.

Selangor, at the mouth of the river of like name, was recently the capital of a petty state. *Klang,* its successor till 1870, lies a little farther south on the river Klang, which is accessible to this point for vessels drawing 13 feet. Steamers of lighter draught ascend 18 miles farther up to *Damasara,* the terminus of a good carriage road, which serves for the transport of ores and metal. Some of the mining companies in this district employ as many as one thousand hands, and use machinery imported from Europe. Large concessions have here also been obtained for the cultivation of tapioca and other tropical plants. The central market for these industries is *Kwala Lampur,* which has been selected by the British resident as the new capital of the protected State. This territory is bounded southwards by

Sungei Ujong, which is also under British protection. But the group of petty republics known as Negri Sembilan, or the "Nine States," which lie farther inland, have hitherto maintained their autonomy. On the opposite slope of the Peninsula the Sultan of Pahang, so named from the large river traversing it, endeavours to retain his independence by recognising two rival masters. Residing in *Pekan* (Pahang), on the estuary of the river, he listens with deference to the counsel of the British officials; but at the same time proclaims himself vassal of

Fig. 242.—Singapore—View taken from Fort Canning.

the king of Siam, to whom, like the sultans farther north, he sends a nominal yearly tribute of a golden vase and a silver rose.

Malacca, capital of the British territory of like name, is the oldest city in the peninsula to which it gives its name. Centre of a powerful Malay empire in the thirteenth century, it was seized in 1511 by the Portuguese, who held it for over a century. With their other Eastern possessions it passed from them to the Dutch, who ceded it in 1824 to the British. At present it is divided by a canal into a

European and native quarter, while the suburbs stretch for several miles amidst gardens and plantations along the shore. But Malacca has in recent years been eclipsed by *Singapore*, the "Lion City," which, notwithstanding its Sanskrit name attesting old Hindu influences, has only recently risen to importance. After

Fig. 243.—SINGAPORE.
Scale 1 : 30,000.

0 to 6 Feet. 6 to 16 Feet. 16 Feet and upwards.
1,100 Yards.

restoring Java to the Dutch, the English purchased from the Sultan of Johor the island of Singapore, whose admirable position at the southern extremity of the peninsula on the highway to China caused it to be selected as the strategic and commercial centre of their possessions in Malaysia. In order to compete with the

exclusive system of the Dutch, the new port was thrown open to the shipping of all nations, and rapidly acquired the monopoly of the trade between India and the Far East. The ports of China, Annam, and Siam were at that time closed to Europeans, while Batavia was free only to Dutch shipping. But Singapore was absolutely free to all comers, and here Chinese, Malays, and Arabs found more liberty and security for life and property than in their own homes. Hence a motley population of over 100,000, from every part of the east, is now grouped in Singapore, which stretches for several miles along the roadstead, and comprises several distinct towns occupied by Malay, Chinese, Malabar, and Kling communities. In the busy shipping quarter the magnificent docks, over 20 feet deep, and the extensive quays, are crowded with vessels from every part of the globe, while the bazaars and warehouses are stocked with the manufactures of Europe and America, and with the spices, cereals, tea, coffee, sugar, oils, gums, gutta-percha, and other produce of the surrounding regions. Much of the vast local traffic is passing into the hands of the Chinese brokers, bankers, and usurers, who advance the price of the cargoes to the native and foreign shippers, and thus, under one title or another, soon acquire all the profits of the exchanges. Nor can the sphere of their action fail to spread with the development of the local communications, including a steam ferry across the strait and the Johor railway, which will sooner or later connect the capital of this dependent state with Malacca and the other towns along the west coast of the Peninsula.

Round about the city are scattered numerous Malay and Chinese settlements, while the slopes of a neighbouring hill are laid out as a park and botanic garden. Although the population is supported almost exclusively by trade, the island is covered with plantations, which are subject to the depredations of a small breed of wild pigs. During the early days of the settlement it was also much infested by tigers, which crossed over from the mainland and destroyed as many as 300 human victims yearly. But this danger has almost entirely disappeared with the progress of agriculture, and thanks to the high prices set by Government and the wealthy merchants on the heads of the royal beasts. Hence European settlers are now able to select the most picturesque spots for country seats, and to enjoy the balmy sea-breezes on the surrounding hills, some of which rise to heights of 400 or 500 feet. From these hills a panoramic view is afforded of the great water highways, all converging at this southernmost point of Asia.

APPENDIX.

STATISTICAL TABLES.

I.—BRITISH INDIA.

AREAS AND POPULATIONS.—BRITISH PROVINCES AND NATIVE STATES.

	Area in sq. miles.	Population, 1871.	Population, 1881.
British Provinces:—			
Bengal	155,997	60,733,078	66,530,127
Assam	55,384	4,124,972	4,815,157
British Burma	87,220	3,154,470	3,707,646
N.-W. Province	81,748	30,781,204	32,699,436
Audh	24.213	11,223,150	11,407,625
Panjab	107.010	17,611,498	18.850,437
Central Province	84.208	8,173.824	9,805,149
Ajmir	2,710	396,889	453,075
Berar	17,728	2,227,654	2,670,982
Kurg	1.583	168,312	178,283
Bombay	126,453	16.349.206	16,454,414
Madras	140,430	31,385.820	30,839,181
Andaman and Nicobar Isles	3,285	25,945	30,000
	887,969	186,356.022	198,441,512
Native States:—			
Bengal	47,440	2,328,440	2,603,492
N.-W. Province	5,125	636,543	744,424
Panjab	114,742	5,370,096	3,861,683
Central Province	29,112	1.049,710	1,700,000
Bombay	66,408	6,784,482	6,941,631
Madras	9,818	3 247.689	3,001,436
Mysore	30,500	5.055,412	4.186,399
Central India	89,098	8,360,571	9,200,881
Rajputana	130,994	10,192.871	11,005,512
Haidarabad	80,000	9,000,000	9,167,789
Baroda	4,399	2,000,225	2.154,469
	607,636	54,026,039	54,567,716
Ceylon	24,702	2,638,000	2,761,000
Laccadives	25	——	13,495
Maldives	360	——	150
Chagos Isles	76	——	690
French Possessions	178	285,022	280,381
Portuguese Possessions	1,086	444,617	444,987
Grand Total	1,520,737	243,749,700	256,641,489

MAIN ADMINISTRATIVE DIVISIONS OF BRITISH INDIA.

	Divisions:—	Area in square miles	Population (1881).
Bengal Province	Presidency division	12.016	8,113,125
	Rajshahi and Kuch Behar	18,760	8,407,559
	Bardwan	13,853	7,385,840
	Dakka	14,998	8,646,012
	Chittagong	15,985	3,732,167
	Patna	23,651	14,975,951
	Bhagalpur	20,489	7,974,608
	Chota Nagpore	43,134	4,714,291
	Orissa	24,240	5,184,066

MAIN ADMINISTRATIVE DIVISIONS OF BRITISH INDIA—*continued.*

	DISTRICTS:—		
ASSAM	Sylhet	5,440	1,973,000
	Kachar	3,750	356,705
	Goalpara	3,897	444,689
	Kamrup	3,631	644,843
	Darrang	3,418	271,504
	Nowgong	3,417	308,889
	Sibsagar	2,855	365,300
	Lakhimpur	3,723	172,079
	Garro Hills	3,653	169,113
	Khasi and Jaintia Hills	6,157	93,100
	Naga Hills	6,400	
	COMMISSIONERSHIPS:—		
BRITISH BURMA	Pegu	25,964	2,323,512
	Arakan	14,526	587,518
	Tenasserim	46,730	825,741
	DIVISIONS:—		
N.-W. PROVINCE	Mirath	11,500	4,977,175
	Rohilkhand	12,200	5,436,314
	Agra	10,500	5,040,919
	Jhansi	5,200	934,934
	Allahabad	13,900	5,468,955
	Benares	18,900	8,179,307
	Kumaon	11,850	743,602
AUDH	Sitapur	7,860	2,598,933
	Lucknow	4,230	2,570,950
	Faizabad	7,940	3,379,262
	Rai Bareli	4,800	2,648,950
PANJAB	Delhi	5,592	1,916,428
	Hissar	8,467	1,232,435
	Ambala	3,963	1,652,728
	Jalandhar	11,890	2,477,536
	Amritsar	5,353	2,743,880
	Lahore	8,979	1,889,485
	Rawal Pindi	16,792	2,197,397
	Multan	20,290	1,474,574
	Derajat	17,504	991,251
	Peshawar	8,177	1,035,789
CENTRAL PROVINCES	Narbadah	18,340	1,590,907
	Jabalpur	19,700	1,946,574
	Nagpur	25,190	2,332,201
	Chattisgarh	24,090	2,331,837
BOMBAY	Northern division	15,895	4,147,928
	Central "	37,798	5,315,133
	Southern "	22,779	3,804,344
	Sind	48,924	2,413,823
	DISTRICTS:—		
MADRAS	Ganjam	8,311	1,520,088
	Vizagapatam	17,380	2,296,351
	Godaveri and Kistna	15,816	3,073,008
	Nellore and Cuddapah	17,484	2,728,005
	Bellary and Anantapur	10,871	1,653,010
	Karnul and Chengalpat	10,375	1,852,616
	North and South Arcot	12,129	3,771,095
	Tanjor and Trichinapoli	7,037	3,174,139
	Madura and Tinnevelli	15,883	3,960,574
	Coimbatore	7,842	1,763,274
	Nilghiris and Salem	8,610	2,041,714
	South Kanara	3,902	918,362
	Malabar	5,763	2,236,032

CHIEF NATIVE STATES.

State.	Area in sq. miles.	Population (1881).	State.	Area in sq. miles.	Population (1881).
Nepal	85,000	3,000,000 (est.)	Travancore	6 730	2,401,000
Bhutan	19,000	700,000	Cochin	1,361	600,278
Manipur	7,584	126,000	Jaisalmir	16,000	75,000
Kashmir	107,000	5,348,000	Marwar	37,000	2,000,000
Sikkim	2,600	50,000	Bikaner	24,800	300,000
Garhwal	4,300	150,000	Jaipur	16,000	1,965,000
Patiala	5,000	1,536,000	Udaipur	12,000	1,160,000
Bahawalpur	15,500	500,000	Gwalior	25,000	2,500,000
Bastar	13,500	78,856	Indor	8,300	635,000
Haidarabad	80,000	9,167,000	Bhopal	3,750	1,022,000
Baroda	4,399	2,000,000	Rewah	13,400	2,035,000
Mysore	30,500	4,186,000			

POPULATION OF INDIA ACCORDING TO RACES AND RELIGIONS.

Races.*		Religions (1881).	
Hindus	190,000,000	Hindu	187,937,000
Dravidians	54,000,000	Mohammedan	50,121,000
Kolarians	4,000,000	Buddhists	3,418,000
Tibeto-Burmans	4,000,000	Sikhs	853,000
Shans	500,000	Nature-Worshippers	6,426,000
Afghans and Baluchis	300,000	Christians	1,862,000
Malays	250,000	Jainas and sundries	4,279,000
Parsis	60,000	Parsi	60,000
British	64,000		

* This classification, which is taken from A. H. Keane's *Asia*, p. 341, is based mainly on language.

TRADE RETURNS.

	Exports.		Imports.
1872	£64,685,000		£43,665,000
1878	67,433,000		58,819,000
1881	76,021,000		62,104,000
1881 (to Great Britain)	32,6_9,000	(from Great Britain)	29,244,000

STAPLE EXPORTS AND IMPORTS (1881).

Exported to Great Britain.		Imported from Great Britain.	
Raw Cotton	£4,360,000	Cotton goods	£20,168,000
Jute	3,967,000	Ironware	1,913,000
Rice	3,485,000		
Tea	3,060,000		
Hides	1,240,568		

SHIPPING.

Vessels Entered	Tonnage.	Vessels Cleared.	Tonnage.
167,000	8,062,000	152,000	7,670,000

Exports of Ceylon (1880), £4,742,000; imports, £5,013,000.

CHIEF TOWNS OF BRITISH INDIA AND NATIVE STATES.

	Population (1881).		Population (1881).
Bombay	773,196	Katmandu	70,000
Calcutta	684,658	Multan	68,674
Madras	405,848	Rampur	68,300
Haidarabad	400,0 0	Bhagalpur	68,238
Lucknow	261,300	Amballa	67,463
Benares	199,700	Moradabad	67,387
Delhi	173,393	Darbhanga	65,955
Patna	170,654	Farrukhabad	62,437
Agra	160,207	Bhartpur	62,000
Amritsar	151,896	Karikal	61,880
Cawnpore	151,444	Aligarh	61,730
Srinagar	150,000?	Sholapur	61,281
Lahore	149,349	Patan	60,000
Allahabad	148,547	Jhodhpur	60,000
Pondicherry	143,500	Muttra	59,280
Bangalore	142,500	Saharanpur	59,194
Jaipur	137,850	Gorakhpur	57,922
Rangun	134,176	Mysore	57,815
Puna	129,751	Trivandram	57,600
Ahmedabad	127,621	Mirzapur	56,378
Surat	113,417	Faizabad	55,570
Baroda	112,000	Monghyr	55,372
Colombo	111,950	Marachi	53,500
Bareli	109,844	Bellari	53,460
Howrah	105,206	Maulmein	53,107
Gwalior	100,000	Rawal Pindi	52,975
Mirath	99,565	Alwar	52,350
Nagpur	98,300	Jallandar	52,119
Trichinapoli	84,849	Point de Galle	52,000
Peshawar	79,980	Salem	50,667
Dakka	79,076	Tanjor	50,098
Gaya	76,915	Murshedabad	50,000
Jabalpur	75,705	Cattak	50,000
Shahjahanpur	74,830	Bhatgaun	50,000
Madura	73,807	Palli	50,000
Karachi	73,560	Aurangabad	50,000

FINANCE (1881).

FINANCE (1881).—Revenue, £72.560,000; Expenditure, £76,604,000; National Debt, £157,288,000.
CHIEF SOURCES OF REVENUE (1881).—Land, £21,113 000; Opium, £10,480,000; Salt, £7.115,000.
CHIEF HEADS OF OUTLAY (1880).—Army, £20,974,000; Justice and Police, £5,776,000; Public Works, £4,875,000; Interest on debt, £4,451,000.

ARMY—NORMAL STRENGTH.

British.	Bengal.	Madras	Bombay.	Total.
Artillery	6,879	2,811	2,549	12,239
Cavalry	2,898	966	483	4,347
Infantry	29,420	8,271	8,271	45,962
Staff, &c.	1,086	685	407	2,178
	40,283	12,733	11,710	64,726
Natives	63,933	34,293	26,645	124 871
Total	104,216	47,026	38,355	189,597

RAILWAYS (1882).—Mileage, 9,875; passengers, 53,000,000; receipts, £13,730,000; expenditure, £6,773,240; total capital expended, £134,200,000.
TELEGRAPHS (1881).—Mileage, 19,079; messages, 1,658,617; receipts, £452,870; expenditure, £310,371.
CANALISATION (1880).—Mileage, 16,150; area of irrigation, 6,310,000 acres; capital expended, £20,500,000.

OCCUPATION OF MALE ADULTS (1880).

Large Landholders	6,500.000	Professions	1,213,000
Small Landholders and Cultivators	28,500,000	Trade	4,500,000
Labouring Classes	10,000,000	Independent	2,000,000
Industries	12,000,000	Carriers, Porters	1,360,000
Officials	1,500,000	Mendicants	1,000,000

EDUCATION AND LITERATURE (1880).

Primary Schools	66,500	Expenditure for Instruction	£970,000
Attendance	1,900,000	Population receiving Instruction	9 per 1,000
Technical Schools	155	Average Yearly Publications	4,800
Attendance	6,900	,, ,, English Works	500
Colleges	82	,, ,, Vernacular	3,000
Attendance	8,900	,, ,, Sanskrit, Pali, &c.	730
Universities	3	,, ,, Bilingual	570
Matriculated Students	18,000		

MISCELLANEOUS.—Villages (British territory), 494,000; houses, 37,000.000; municipal population, 1,500 000; towns with 10,000 to 50,000 population, 1,360; towns with over 50,000 population, 46; mean population to square mile, 212; land under cultivation, 300,000,000 acres; waste or unproductive, 290,000,000 acres; under crops of all sorts, 188.000,000 acres; under food crops, 166,000,000 acres; yield of food crops, 52,000,000 tons; value of food crops, £332,000,000; output of coal, 1,000,000 tons; circulation of Government paper money, £13,000,000; spinning and weaving mills, 53; spindles, 1,500,000; police, 158,000; rural police, 442,000; yearly criminal charges, 970,000; yearly convictions, 550.000; prisoners and convicts, 118,500; yearly civil lawsuits, 1,500,000; hospitals and dispensaries, 1,150; annually destroyed by wild beasts, persons, 20,000; cattle, 50,000; emigration from 1869 to 1879, 173,420; Indian coolies abroad, 760,000.

II.—INDO-CHINA AND MALACCA.

AREAS AND POPULATIONS.

	Area in square miles.	Population (estimated).
Burma	183,000	4.000,000
Siam	350.000	5,750,000
Annam	176,000	14,000,000
Camboja	33,000	950,000
French Cochin-China	24,000	1,900,000
PETTY STATES, MALACCA.—		
Kedah	3,600	30,000
Patani	5,000	30,000
Kelantan	7.000	20,000
Tringganu	6,000	50.000
Perak	6,500	30.000
Selangor	3,000	15,000
Johor	10.000	20,000
Negri Sambilan	5,000	50,000
Pahang	3,500	20,000
Straits Settlements	1,445	423,000 (1881)

Approximate Population of Indo-China according to Races.

Burmese, Mons, and Karens	3,750.000	Annamese	15,000,000
Kakhyens	250 000	Cambojans	1,000,000
Shans	1.500 000	Wild tribes	500,000
Siamese	2,000,000	Chinese	2,000,000
Laos	1 500,000	Malays	1,000,000

CHIEF TOWNS.

	Population
Burma—	
Mandalay	100,000
Myi Kyan	15,000 ?
Magwé	8,000
Moné	8,000
Bhamo	5,000
Muchobo	5,000
Camboja—	
Prom Penh	30,000
Udong	12,000
Kamput	2,000
French Possessions—	
Saigon	65,000
Cholon	50,000
Mytho	15,000
Annam—	
Hanoi (Kesho)	130,000
Hué	60,000
Namdinh	50,000
Haidzuong	50,000
Hakoi	10,000
Song-tai	8,000
Turane	3 000

	Population
Siam—	
Bangkok	600,000
Ayuthia	50,000
Xieng Mai	50,000
Lakhon	25,000
Luang Prabang	15,000
Pré	15,000
Labong	12,000
Nakhon-Savan	12,000
Petrin	10,000
Meklong	10,000
Paklat	7,000
Korat	7.000
Paknam	7,000
Malacca—	
Singapore	100,000
Georgetown	60.000
Malacca	20,000
Tavoy	14,800
Mergui	10.750
Kedah	8,000
Panga	8,000

MISCELLANEOUS.

Siam.

Imports, Bangkok (1879), £1,300,000.
Exports, ,, ,, £2,160.000.
Shipping, ,, { entries, 583 ships, of 185,000 tons. / cleared, 526 ,, 182,000 ,,
Mercantile Marine—58 vessels, of 20,000 tons.
Navy—14 steamers, of 5,815 tons and 51 guns.
Average revenue, £3,000,000.

Annam.

Army—80 regiments, 40,000 men.
Fleet—11 ships, 300 junks 16,000 men, 1,400 guns.
Imports, Haipong (1880), £218,000; exports, £300,000.
Shipping, ,, ,, ships and junks, 458, of 123,820 tons.
British shipping, Haipong (1880, 35 per cent.
Exchanges of Hanoi with Yunnan by the Red River, 1880, £140,000.

French Cochin-China.

Revenue (1882), £875,000; expenditure, £1,100,000.
Average imports, £2,750,000; exports, £3,500,000.
Shipping, Saigon (1879), 850 vessels, of 700,000 tons.
British shipping ,, 336 ,, 284,750 ,,
Area under rice, 1,232,000 acres; rice exported (1879), £1,600,000.

Straits Settlements.

Revenue (1880), £380,000; expenditure, £360.000.
Imports (1880), £13,500,000; exports, £12,750 000.
Shipping (1870), 1,651,000 tons; (1877), 3,972,000 tons.

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